Mood effects on attitude judgements: the independent effects of mood before and after message elaboration

Bless, Herbert; Mackie, Diane M.; Schwarz, Norbert

Veröffentlichungsversion / Published Version
Arbeitspapier / working paper

Zur Verfügung gestellt in Kooperation mit / provided in cooperation with:
GESIS - Leibniz-Institut für Sozialwissenschaften

Empfohlene Zitierung / Suggested Citation:
Bless, H., Mackie, D. M., & Schwarz, N. (1992). *Mood effects on attitude judgements: the independent effects of mood before and after message elaboration.* (ZUMA-Arbeitsbericht, 1992/09). Mannheim: Zentrum für Umfragen, Methoden und Analysen -ZUMA-. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-69724

ZUMA-ARBEITSBERICHT No. 92/09

The enclosed reprint replaces ZUMA-Arbeitsbericht No. 92/09 by the same authors.

Bless, H., Mackie, D., & Schwarz, N.

Mood effects on attitude judgments: The independent effects of mood before and after message elaboration.

Journal of Personality and Social Psychology, 1992, 63, 585-595.

Journal of Personality and Social Psychology
1992, Vol. 63, No. 4, 585-595

0022-3514/92/$3.00

Mood Effects on Attitude Judgments: Independent Effects of Mood Before and After Message Elaboration

Herbert Bless
Universität Mannheim, Mannheim, Federal Republic of Germany

Diane M. Mackie
University of California, Santa Barbara

Norbert Schwarz
Zentrum für Umfragen, Methoden und Analysen, ZUMA, Mannheim, Federal Republic of Germany

This study investigated the independent effects of induced mood on the encoding of persuasive messages and on the assessment of attitude judgments. In Experiment 1, positive or negative mood was induced either before the encoding of a counterattitudinal message or before the assessment of attitude judgments. When mood was induced before message presentation, Ss in a bad mood were more persuaded by strong than by weak arguments, whereas Ss in a good mood were equally persuaded by strong and by weak arguments. When Ss encoded the message in a neutral mood, however, the advantage of strong over weak arguments was more pronounced when Ss were in a good rather than in a bad mood at the time of attitude assessment. In Experiment 2, Ss exposed to a counterattitudinal message composed of either strong or weak arguments formed either a global evaluation or a detailed representation of the message. Positive, negative, or neutral mood was then induced. Ss in a good mood were most likely and Ss in a negative mood least likely to base their reported attitudes on global evaluations.

Using a range of different mood inductions and persuasive messages about a variety of attitudinal issues, recent studies have consistently found that recipients' processing of persuasive communications depends on their affective state. Whereas people in neutral or negative moods are differentially affected by the quality of persuasive messages and report more favorable attitudes after exposure to strong rather than weak arguments, recipients in a good mood are as persuaded by weak as strong arguments. Moreover, cognitive responses to persuasive messages reflect the quality of the presented arguments when people are in neutral or bad moods, but not when they are in good moods (Bless, Bohner, Schwarz, & Strack, 1990; Innes & Ahrens, 1991; Mackie & Worth, 1989; Worth & Mackie, 1987; for an overview see Schwarz, Bless, & Bohner, 1991).

These findings are consistent with recent models of mood effects on processing style that suggest that individuals in positive affective states tend to simplify processing tasks (for reviews see Fiedler, 1988; Isen, 1987; Schwarz, 1990). That recipients in a good mood are equally persuaded by strong and by weak arguments has accordingly been interpreted as indicating that these recipients are less likely to engage in "systematic" (Chaiken, 1980, 1987) or "central route" processing (Petty & Cacioppo, 1981, 1986; Petty, Wells, & Brock, 1976) of the content of persuasive messages. Because they appear not to elaborate the content of a message extensively, recipients in a good mood are more likely to be influenced by the use of simplifying cognitive strategies to assess message validity. This conclusion is supported by the finding that attitudes of subjects in a positive but not a neutral mood reflect the presence of heuristic cues (Mackie & Worth, 1989; Worth & Mackie, 1987). Moreover, increasing the amount of elaboration by providing additional time for processing eliminates the typical effect of positive mood (Mackie & Worth, 1989), and experimentally decreasing the amount of elaboration by introducing a distracter task produces identical attitude judgments in subjects in both positive and negative moods (Bless et al., 1990, Experiment 2).

Although the impact of mood has been attributed to its impact on encoding in all of the previously mentioned studies, it remains unclear whether mood at encoding constitutes a sufficient condition for the observed effects. In all studies, mood was induced immediately before a rather short message was presented and attitudes were assessed as soon as the presentation was completed. Thus, recipients could have been in the same affective state both when they encoded the message and when they reported their attitude judgment. Accordingly, recipients' mood at the time of encoding and at the time of attitude assessment may have been confounded in this research. Experiment 1 was designed first to investigate the crucial role of mood at encoding independent of mood at assessment, and second to explore possible mood effects that may occur after the message has been encoded.

Experiment 1 was conducted by Herbert Bless in partial fulfillment of the requirements for a doctoral dissertation, supported by Grants Schw 278/2 and Str 264/3 from the Deutsche Forschungsgemeinschaft to Norbert Schwarz and Fritz Strack. Experiment 2 was supported by a fellowship from the DAAD (German Academic Exchange Service) to Herbert Bless and by Grant MH 43041 from the National Institute of Mental Health to Diane M. Mackie.

We thank David Meisels and Lisa Minnelli for their help with data collection for Experiment 2.

Correspondence concerning this article should be addressed to Herbert Bless, FP Subjektive Erfahrung, Universität Mannheim, Steubenstrasse 46, D-6800 Mannheim, Federal Republic of Germany.

Experiment 1

If the previously obtained findings reflect only the impact of mood at encoding, the pattern of effects typically found should again be obtained when mood is induced at elaboration but allowed to dissipate before attitude assessment. That is, recipients who encode the message in a negative mood should report more favorable attitudes after exposure to strong as compared with weak arguments, whereas recipients who encode the message in a positive mood should be unaffected by argument quality.

How might recipients' mood influence attitude judgments made about material encoded before an affective state was induced? Given that sufficient message elaboration occurs during encoding, various strategies might be used when attitude judgments are later required. Moreover, different strategies might be preferred by individuals in different mood states.

Suppose that while encoding the message in a nonaffective state recipients spontaneously form an attitude judgment that reflects the differential impact of strong versus weak arguments. If so, they may simply retrieve this previously formed judgment when later asked to report their attitude (Lingle & Ostrom, 1981). If this is the case, the attitudes of subjects in both positive and negative moods should equally reflect argument quality.

Often, however, a particular judgment may not be formed during encoding because other processing objectives are required (Hastie & Park, 1986; Mackie & Asuncion, 1990), or it may not be easily accessible in memory. In such circumstances subjects have to recall attitude relevant information to compute the required judgment. At least three types of information could be retrieved.

First, subjects may try to recall as much relevant information as possible. Given the retrieval advantage of internally generated material (Slamecka & Graf, 1978) the most accessible material may well be the cognitive responses generated in response to processing the message (Greenwald, 1968; Love & Greenwald, 1978). For all intents and purposes, this retrieval strategy simulates elaboration during message presentation, and attitudes should thus reflect the quality of the arguments. Because subjects in a good mood attempt to simplify processing, they are less likely to engage in this effort than subjects in a bad or neutral mood. Accordingly, the differential impact of strong versus weak arguments should be stronger for subjects in a bad mood rather than a good mood, paralleling the effects of mood at encoding.

Second, instead of an effortful recall of reactions to message content, subjects could simply retrieve characterizations of the message that represented some kind of summary of the provided information. This might be a global evaluation of the message as weak or strong, unaccompanied by information about particular arguments or responses (that may or may not have been stored simultaneously during encoding, Ebbesen, 1980, 1981; Wyer & Srull, 1989). As judgments based on simple structures have been demonstrated to be more extreme than judgments based on more complex knowledge structures (Linville, 1982; Linville & Jones, 1980; Judd & Lusk, 1984) this strategy should result in judgments that clearly differentiate between messages comprising strong versus weak arguments. As this strategy seems to simplify cognitive processing, it should especially be preferred by subjects in positive moods. If so, the impact of argument quality may be more pronounced when subjects are in a good rather than a bad mood at the time of attitude assessment, reversing the previously obtained impact of mood at encoding.

A third possibility is that subjects attempt to retrieve information from the message or their reaction to it but that this process is influenced by their current mood state (Forgas & Bower, 1987; Srull, 1983). This would give a retrieval advantage to mood-congruent material, suggesting that subjects in a positive mood would retrieve predominantly favorable information and thus be persuaded, whereas subjects in a negative mood would retrieve predominantly unfavorable material and show no attitude change.

Finally, individuals may make the judgment by consulting their own affective state according to a "how-do-I-feel-about-it?" heuristic (Schwarz & Clore, 1983, 1988). One's subjective affective state may thus be used (either appropriately or inappropriately) as a heuristic cue. If individuals in a good mood are more likely to use such a heuristic, their judgments should be more positive than judgments of individuals in a bad mood, regardless of argument quality. In summary, the first two recall-based hypotheses predict interaction effects of mood and argument quality, whereas the last two hypotheses predict a main effect of mood.

Method

Subjects and Design

Seventy-six University of Heidelberg students received DM10 (approximately $5 at the time of the experiment) for their participation. Subjects were run in groups of 3 to 6 and were randomly assigned to the conditions of a 2 (positive or negative mood) × 2 (strong or weak arguments) × 2 (mood induced at encoding or at judgment) factorial design.

Procedure

Subjects were informed that they would be completing several different and independent tasks and that they would be asked some questions about each of the completed tasks. It was emphasized that these tasks all involved pretesting language materials for use in other studies. These tasks (described later) included (a) the mood induction, (b) the presentation of the persuasive message, (c) a neutral filler task, and (d) the assessment of dependent variables. The order in which the mood induction task and the filler task was presented was counterbalanced (as described later) to induce positive or negative mood either before message encoding or before the assessment of attitudes. Most of the experimental manipulations of Experiment 1 had been used successfully in two earlier experiments (Bless et al., 1990).

Mood induction. In this task, subjects were asked to provide a vivid and detailed written report of either a happy or a sad life event, purportedly to help with the construction of a "Heidelberg Life Event Inventory." Reporting a happy event was intended to induce positive mood, whereas focusing on an experienced sad event was intended to induce negative mood (Schwarz & Clore, 1983; Strack, Schwarz, & Gschneidinger, 1985). Subjects were given 15 min for their report and were then asked several questions about the task. Embedded among these questions was a manipulation check that read, "How do you feel right now?" (1 = *very bad* and 11 = *very good*).

Presentation of persuasive message and manipulation of argument

quality. Subjects were told that this task was concerned with language comprehension and with pretesting the comprehensibility of a particular text. Subjects listened to a tape-recorded communication that announced an increase in student services fees from DM45 to DM65 per semester (an increase of approximately $10) slated to take effect at the beginning of the next academic year at the University of Heidelberg.[1] The fee increase was justified in the communication with either 11 strong or 11 weak arguments. Differences in the quality of these sets of arguments had been convincingly demonstrated in previous studies (Bless et al., 1990). Both messages were of approximately equal length.

After listening to the message, subjects answered several questions about the presentation of the message (e.g., how acoustically clear the speaker was, how appropriate the speaker's style of speaking was, how easy or difficult the language used in the text was to understand, and how well they could concentrate on the text). None of these questions referred to the quality or content of the message.

The cover story that various texts were being pretested, the introduction of this particular task as concerning language comprehension, and the selection of questions that focused on various linguistic aspects of the message were all designed to reduce the likelihood that subjects would form attitudinal judgments during encoding of the message. As in previous research, the presentation of alternative processing goals during encoding and judgment was designed to inhibit on-line attitude formation (Hastie & Park, 1986; Lichtenstein & Srull, 1987; Mackie & Asuncion, 1990).

Neutral filler task. This task required subjects to read a text about a man having dinner at a restaurant and to reproduce this story. The content of this filler task was unrelated to the content of the persuasive message and did not include any statements potentially eliciting a positive or a negative mood state. Subjects were given 15 min to complete this task.

After completing the filler task, subjects were asked several questions, one of which again served to assess mood. Subjects responded to the item "How do you feel now?" by checking the same scale used to assess the mood manipulation.

The neutral filler task had two purposes. First, it was intended to ensure the return of subjects to a relatively neutral mood state. Thus, in the case in which the filler task followed the mood manipulation and the presentation of the persuasive message, it was designed to ensure that any mood effects present during message encoding were no longer present when attitude judgments were reported during the dependent measure task. When the filler task preceded message presentation it ensured that subjects were all in a relatively uniformly neutral mood at message presentation, regardless of their mood state on entering the experiment. The filler task also served to equate the passage of time spent on the mood induction task so that regardless of order condition, 15 min elapsed between presentation of the persuasive communication and the assessment of the dependent measures.

Induction of mood before or after message presentation. The order in which the mood induction task and the filler task was presented was counterbalanced. For half the subjects the mood induction immediately preceded the presentation of the message and the filler task followed message presentation. In this condition, induced mood was intended to be present at encoding of the persuasive message but to have dissipated before the dependent measures were assessed. For the other half of the subjects, the filler task preceded message presentation, and the mood induction followed the message but immediately preceded assessment of the dependent variables. In this condition, it was intended that mood effects would not be present during encoding but would be present during the assessment of dependent measures.

Dependent Measures

Attitude judgment. Before answering other questions subjects indicated their approval of the anticipated increase in student fees by checking a 9-point rating scale where 1 indicated *strongly disapprove* and 9, *strongly approve.*

Cognitive responses. Subjects were then given 3 min in which to list "all thoughts that came to mind *while* listening to the tape recording." Subjects were provided with a sheet of paper divided into 10 boxes and were instructed to list only one thought per box. Subjects were not required to use all the boxes. After completing the thought listing, subjects indicated whether each thought they had listed was *favorable* (supportive of the proposed fee increase), *unfavorable* (opposed to the increase), or *neutral* (unrelated to the issue).

Recall of message content. Finally, in a surprise recall test, subjects were given 3 min in which to write down any and all the presented arguments they could remember.

Results

Effectiveness of Mood Manipulations

Responses to the items assessing subjects' mood before message presentation and before attitude assessment were analyzed by two analyses of variance (ANOVAs).

Mood at encoding. Subjects' self reports of subjective state immediately before being exposed to the persuasive communication revealed a significant main effect for mood, $F(2, 61)^2 = 6.55$, $p < .003$, as expected. Subjects who had described a positive life event reported being in a better mood ($M = 7.8$) than both subjects who had described a negative life event ($M = 5.9$), $t(61) = 3.61$, $p < .0005$, and subjects who had worked on the filler task ($M = 7.1$), $t(61) = 1.70$, $p < .05$. In addition, subjects who had described a negative life event reported being sadder than subjects who had worked on the filler task, $t(61) = -2.32$, $p < .02$ (all comparisons one-tailed). Thus, mood was successfully manipulated before presentation of the persuasive communication.

Mood at assessment of attitudes. The responses of subjects who had described life events immediately before assessment of the dependent measures also revealed a main effect for induced mood, $F(2, 72) = 7.33$, $p < .002$. Those who described a positive life event reported being in a better mood ($M = 8.7$) than both subjects who had described a negative life event ($M = 6.3$), $t(72) = 3.73$, $p < .0005$, and subjects who had worked on the filler task ($M = 7.1$), $t(72) = 2.86$, $p < .003$. In addition, subjects who had worked on the filler task reported marginally better mood than subjects who had described a negative life event, $t(75) = -1.46$, $p < .08$ (all comparisons one-tailed). Mood had thus been successfully induced immediately before assessment of the dependent measures. In addition, the comparisons with reports from subjects completing the neutral filler task indicated that the effects of mood induced before message presentation had dissipated before attitude assessment, as intended.

---

[1] Although an increase of DM20 may seem slight, it should be noted that the last actual fee increase of DM11 in 1982 caused massive student protests. The proposed increase was thus clearly counterattitudinal for the subjects.

[2] Eleven subjects in the mood at judgment condition did not fully complete the neutral filler task before message presentation. The responses of these subjects did not differ from those of other subjects in this condition on any dependent variable (all $ps > .20$) and were included in the analysis.

Attitude Change

The influence of the persuasive communication was inferred from recipients' approval of the suggested fee increase. Mean approval scores appear in Table 1 as a function of induced mood, timing of mood induction, and argument quality.

The extent to which subjects agreed with the advocated increase was analyzed in a 2 (mood) × 2 (timing of mood induction) × 2 (argument quality) between-subjects ANOVA. Subjects reported greater approval of the fee increase after hearing strong (M = 4.16) as compared with weak (M = 2.28) arguments, $F(1, 68) = 22.75$, $p < .005$. As predicted, however, this differential effect of argument quality was affected by both the induced mood and the timing of the mood induction, as revealed by a significant three-way interaction involving these factors, $F(1, 68) = 6.94$, $p < .02$. To clarify these effects, further analyses were performed to investigate the independent effects of mood at the time of encoding and at the time of judgment.

Mood at encoding. A simple effects analysis revealed a main effect of message quality, $F(1, 68) = 3.95$, $p < .05$, qualified by a marginally significant interaction between the valence of the mood induced before message presentation and the quality of arguments presented in the message, $F(1, 68) = 3.29$, $p < .07$. Specifically, strong arguments were more influential than weak arguments when subjects were in a bad mood at the time of encoding of the message, $t(68) = 2.68$, $p < .009$, but argument quality had no impact when subjects were in a good mood at that time ($t < 1$). Thus, when mood was induced at encoding and had dissipated by the time judgments were reported, the pattern of results replicated previous findings (Bless et al., 1990; Mackie & Worth, 1989; Worth & Mackie, 1987). This finding demonstrates that recipients' mood at encoding is sufficient to produce the previously reported effects, given that the induced mood states had dissipated by the time of the attitude report.

Mood at assessment of attitude judgment. When mood was manipulated immediately before attitude judgments were assessed, strong arguments produced more approval than weak arguments for all subjects (M = 4.5 vs. M = 2.0), $F(1, 68) = 21.76$, $p < .001$, for the simple main effect. However, this effect was even more pronounced for subjects in a good mood (M = 5.2 and M = 1.6 for strong and weak arguments, respectively), $t(68) = 4.65$, $p < .0005$, than for subjects in a bad mood (M = 3.8 and M = 2.3 for strong and weak arguments, respectively), $t(68) = 1.95$, $p < .06$. This pattern is reflected in a marginally significant simple interaction, $F(1, 68) = 3.67$, $p < .06$, indicating that mood induction at the time of judgment was also capable of influencing persuasion outcomes.

Cognitive Responses and Message Recall

The proportion of favorable and unfavorable thoughts in response to strong and weak arguments during encoding was influenced by the nature and timing of the induced mood state. Overall, subjects reported a higher proportion of favorable thoughts in response to strong than to weak arguments (M = 0.29 vs. 0.13), $F(1, 68) = 11.40$, $p < .001$, and a lower proportion of unfavorable thoughts (M = 0.38 vs. 0.57), $F(1, 68) = 10.86$, $p < .002$.

More important, however, these main effects were qualified by the impact of both induced mood and the timing of the mood induction, indicated by marginal interaction effects for both favorable responses, $F(1, 68) = 3.59$, $p < .07$, and unfavorable responses, $F(1, 68) = 2.59$, $p < .12$. Replicating previous research, strong arguments elicited a higher proportion of favorable and a smaller proportion of unfavorable thoughts than weak arguments when subjects were in a negative (Bless et al., 1990) or a neutral mood (Mackie & Worth, 1989; Worth & Mackie, 1987) but not when subjects were in a good mood while encoding the message.[3,4]

Table 1
Attitude Change as a Function of Mood, Timing of Mood Induction, and Argument Quality (Experiment 1)

	Timing of mood induction			
	Mood before encoding		Mood before judgment	
Argument type	Positive	Negative	Positive	Negative
Strong	3.6	4.1	5.2	3.8
Weak	3.4	1.9	1.6	2.3

Note. The possible range of values for approval was 1 (*strongly disapprove*) to 9 (*strongly approve*).

Discussion

The present results demonstrate that recipients' mood state can affect attitude judgments either by influencing the encoding of the message or by influencing processes independent of initial message elaboration. In contrast with all other subjects, subjects in a good mood during message encoding did not show differential attitude change nor differential cognitive responses to messages containing strong or weak arguments. This finding adds further support to the idea that recipients in a good mood simplify processing by reducing the amount of message elaboration (for an overview see Schwarz et al., 1991). More important, the results extend previous findings in two ways. First, given that the induced mood state had dissipated by the time attitudes were reported, the findings indicate recipients' mood at encoding is by itself sufficient to produce the previously re-

[3] Specifically, subjects in a negative mood reported a higher proportion of favorable thoughts and a lower proportion of unfavorable after strong than after weak arguments (M = 0.33 vs. M = 0.07 and M = 0.35 vs. M = 0.54), $t(68) = 2.57$, $p < .02$, and $t(68) = -1.49$, *ns*. These differences were not obtained for subjects who were in a good mood during message exposure (M = 0.19 vs. M = 0.24 and M = 0.46 vs. M = 0.53), both $ts < 1$. Subjects in a neutral mood while encoding, that is, those for whom mood was induced after encoding, reported a higher proportion of favorable thoughts and a lower proportion of unfavorable after strong than after weak arguments (M = 0.32 vs. M = 0.11 and M = 0.35 vs. M = 0.60), $t(68) = 3.23$, $p < .01$, and $t(68) = 3.17$ $p < .01$.

[4] Subjects' recall of the presented arguments was unaffected by their affective state. Overall, strong arguments were better recalled (M = 7.2) than weak arguments (M = 6.1), $F(1, 68) = 20.45$, $p < .005$, but no other effects of the variables on total recall were found, again paralleling previous findings (Bless et al., 1990).

ported effects of positive mood on persuasive processing. Second, the present results also suggest that happy recipients cannot later compensate for their lack of message elaboration, even if the attitude judgment is required when the initial affective state has dissipated.

The impact of induced mood was not restricted to the encoding stage, however. When a positive or negative mood was induced after subjects had encoded the message in a neutral mood, the advantage of strong over weak arguments was more pronounced for subjects in a good mood. This occurred despite the fact that subjects' recall of and cognitive responses to message content were not affected by postmessage mood inductions, indicating that all subjects had encoded and elaborated the message to the same degree, as intended. Our results thus indicate that moods may affect judgmental processes, and hence the effectiveness of persuasive communications, even if they are induced after the persuasive message has been encoded.

The pattern of attitude outcomes we obtained under these conditions allowed us to eliminate several processing pathways by which affect induced at judgment could have had its effects. First, the fact that mood effects were obtained eliminates the possibility that subjects had formed attitudes on-line and were merely reporting those previously formed judgments. If this had been the case, there would have been no evidence of mood effects on outcomes, as all subjects processed the message in a neutral mood. This finding confirms the effectiveness of the technique of presenting subjects with other processing goals for inhibiting on-line judgments (Hastie & Park, 1986; Lichtenstein & Srull, 1987; Mackie & Asuncion, 1990). Second, the obtained pattern eliminated the possibility that subjects retrieved cognitive responses previously elicited by the message to simulate on-line elaboration. Again, if this were the case, all subjects should have produced similar judgments, as all subjects encoded the message under identical conditions. Finally, the failure to find a main effect that reflected greater persuasion in the positive mood condition eliminated two other possibilities. Both biased retrieval of mood-congruent responses or reliance on the how-do-I-feel-about-it? heuristic would have produced such a pattern. Thus, it appears that neither of these possibilities can explain the impact that mood induced before judgment had on attitudinal outcomes.

In summary, the impact of induced mood state produced diametrically opposed patterns depending on when mood was induced: The differential impact of strong versus weak arguments was decreased when positive mood was induced before message presentation, whereas it was increased when positive mood was induced after message presentation but before the assessment of attitude judgments. We propose that both effects are due to subjects' tendency to reduce cognitive effort while being in a good mood. When mood is induced before exposure to the message, good mood results in reduced elaboration of message content. When mood is induced after message encoding but before attitude assessment, it presumably affects what information subjects use in making a judgment. Specifically, our findings suggest that although subjects who encoded the message in a neutral mood had similar representations of the message available, subjects in different mood conditions based their judgment on different aspects of this representation. The obtained pattern suggested that the impact of positive mood was to rely on some representation that further strengthened the impact of argument quality, yet did not involve mood-specific retrieval of arguments from or reactions to the message. Thus, in the second experiment we turned our attention to investigating what representations of message content formed during encoding may have been used by subjects in a positive mood at judgment to produce the obtained effects.

Experiment 2

Unfortunately, previous research has had little to say about how persuasive messages are represented in memory or about the way in which retrieval of different types of information can influence attitude judgments. Relevant hypotheses can be derived, however, from research in other domains (Hastie, Park, & Weber, 1984; Wyer & Gordon, 1984; Wyer & Srull, 1989). There is increasing agreement across models that representation of social information may simultaneously contain both global and specific information. For example, Ebbesen (1980, 1981) and Wyer and Srull (1989) have argued that both global impressions of and individual behaviors performed by target persons may be stored during encoding and that either can be used as the basis for judgments. Using these assumptions as a parallel, we suggest that representations of attitude-relevant information in a persuasive message could include global evaluations (e.g., "This was pretty convincing.") or more detailed information (such as presented arguments, cognitive responses to them, and other details of the persuasive context), or both. If so, attitude judgments might be based on different representations of the same message. Moreover, subjects' processing strategy may determine which representation is used, which in turn may determine the resulting attitude judgment.

In many situations in which on-line attitude change occurs, it is likely that one of the global judgments formed and encoded is an attitude judgment, either a new judgment or a modification of a previously held opinion. The encoding conditions we induced, however, inhibited the formation of on-line attitudes (as indicated by the results of Experiment 1). What global representations of the message might have been formed spontaneously in this case? Given that we explicitly directed subjects to the nature of the language used in the message, it is likely that global evaluations of the language and arguments as strong and powerful ("Those were pretty good arguments.") or weak and specious ("Those arguments were pathetic.") may well have been formed.[5] Thus, such summary evaluations—as well as specific arguments and cognitive responses—might have been stored after encoding and may have been available for later use in making an attitude judgment.

What, however, would be the effect of retrieving global representations of a persuasive message? In fact, reliance on global evaluations might produce judgments that are more extreme

[5] The formation of a global evaluation of the message ("it was a strong message" or "there wasn't much to support the position") does not entail the formation of an attitude judgment about the issue, as evidenced by the independence of perceptions of the quality of arguments and their effects on attitude change (Bless et al., 1990; Mackie & Worth, 1989).

than those based on careful processing of details of the message. Evidence for this assumption is provided by findings suggesting that judgments are more likely to be extreme if they are based on simple knowledge structures and schemata rather than on more complex knowledge structures (Judd & Lusk, 1984; Linville, 1982; Linville & Jones, 1980). It is argued that relying on simple representations decreases the number of different dimensions used in the judgment. Thus, it becomes more likely that moderating or inconsistent information is omitted. By the same argument, complex representations including multiple dimensions increase the likelihood of moderate, less extreme judgments. In the persuasive context, then, reliance on retrieval of the message's content would produce a main effect for argument quality. However, not all arguments may appear equally strong or weak to all recipients. To the extent that recipients rely on global evaluations, these (partially idiosyncratic) differences in the strength of individual arguments may be missed. As a result, the use of global evaluations may accentuate differences between messages, resulting in significantly stronger effects of overall argument quality in attitude judgments.

At least two factors may influence which type of message representation will be used in making attitudinal judgments. First, a representation is more likely to be used if its accessibility is increased (Wyer & Srull, 1989). For example, any representation that has been recently formed, used, or activated in some way is more likely to provide the basis for a judgment than is less accessible material.

Second, the use of different representations may depend on the degree to which the perceiver chooses to or is able to allocate resources to the judgment process. Retrieving the numerous detailed and specific arguments and thoughts elicited by the message content requires a considerable amount of processing. Not only must repeated retrieval be sustained, but the independent pieces of retrieved information need to be combined. In contrast, an already existing global evaluation can serve as a single cue on which attitude judgments are made. Thus, global evaluations may have more impact when other variables decrease the amount of processing. In contrast, variables that increase the amount of processing should make it more likely that thoughts elicited by the message will be reconsidered.

These considerations provide a tentative explanation for the results obtained in our first experiment. As noted earlier, previous evidence suggests that individuals in a positive mood tend to simplify their processing and rely on the use of simple heuristics (Fiedler, 1988; Isen, 1987; Schwarz, 1990). If so, little attention may be allocated to judgment processes (just as positive mood at encoding results in reduced elaboration), and happy subjects should be more likely to use a global evaluation as a heuristic cue to an appropriate attitude judgment. This in turn would result in more extreme judgments. The use of global evaluations as a basis for making later attitude judgments thus provides a possible explanation of the increased impact of message quality found under the elated mood at judgment conditions of Experiment 1.

The mediating role of reliance on different message representations as a possible explanation of our findings was tested more directly in Experiment 2. In addition to manipulating induced mood and the strength of presented arguments, we manipulated the accessibility of different message representations. This was accomplished by requiring subjects either to judge the message as a whole on the dimension of quality or to consider the multiple and different arguments comprising the message. Whereas the former task should result in a global evaluative representation of the message, the latter task should result in a more detailed representation. In the neutral mood condition, we expected subjects to rely more on the detailed or on the global representation, depending on which one was rendered more accessible by the preceding task. Thus, we expected to see an effect for argument quality when the detailed representation was accessible and an even greater effect of message quality when global evaluations were accessible.

The accessibility of different representations was expected to have different effects in the affective conditions, however. The accessibility of a global evaluation absolves subjects in a positive mood from doing extensive processing; thus, they are likely to rely heavily on it and we expected a strong effect for message quality in this condition. If a global evaluation is not easily accessible, however, attitude judgments can only be based on the more difficult recall and integration of the arguments and thoughts stored in the detailed representation. As individuals in a good mood are less likely to engage in this effortful process, their attitudes should not reflect message quality when the detailed representation is most accessible.

In contrast, if individuals in negative affective states are more likely to engage in a more systematic and effortful processing (Fiedler, 1988; Schwarz, 1990), they should engage in a thorough recall of all information they can remember. Thus, the absence or presence of an easily accessible global evaluation should have little impact on their attitude judgments, which should reflect argument quality independently of the type of representation formed.

Based on these considerations, we made the following predictions. When a global evaluation was accessible, we expected it to be used by subjects in a good and in a neutral mood, but not by subjects in a bad mood. Thus, we expected attitude judgments of subjects in a good or a neutral mood to reflect the overall quality of the arguments more strongly than attitude judgments of subjects in a bad mood. In contrast, when a detailed representation of the message was made easily accessible, we expected subjects in a neutral and a bad mood, but not subjects in a good mood, to use recalled details in computing an attitude judgment. Accordingly, attitude judgments of subjects in a bad and a neutral mood, but not of subjects in a good mood, should reflect message quality under this condition.

Method

Subjects and Design

One hundred eighty-one introductory psychology students at the University of California, Santa Barbara (UCSB), received partial credit for their participation. Subjects were randomly assigned to the conditions of a 3 (positive, neutral, or negative mood at the time of judgment) × 2 (strong or weak arguments) × 2 (global evaluation or detailed representation) factorial design. Subjects were run in groups of 3 to 6.

Procedure

Subjects assembled in a reception room and were told that they would be asked to complete a number of unrelated tasks. These tasks included the viewing and evaluation of materials presented both by video and on a computer screen. Subjects were seated individually in visually isolated computer booths. Each booth contained an IBM PC-XT, which presented further instructions and stimulus materials relevant to the first task.

Message presentation and manipulation of argument quality. Subjects read that the first task concerned language comprehension. They then initiated presentation of a persuasive message advocating continued oil drilling off the southwestern coast of the United States (a position that pretesting had established as counterattitudinal for the majority of UCSB students). The position taken in the message appeared first and was followed by a series of arguments, each of which was presented individually for a fixed amount of time. Half of the subjects saw arguments that pretesting had demonstrated to be strong (M = 11.2, where 15 = *very strong*). The other half saw arguments pretested as weak (M = 7.3), $F(1, 13) = 40.84$, $p < .0001$. The two versions of the message were approximately equal in length.

Manipulation of message representation. After reading the message, subjects were asked to answer four questions, ostensibly assessing language comprehension. Only the last of these questions in fact referred to the content of the message, and this question was designed to induce subjects to form either a global evaluation or to think about the details of the message content. Half the subjects were asked to think about "the strength of the arguments you saw" and to rate the strength or weakness of the arguments using a 9-point rating scale where 9 indicated *very strong.* This question was intended to have subjects form a global evaluation related only to the strength of the arguments contained in the message. The other half of the subjects were asked to think about the different arguments presented in the message and to indicate how many different arguments had been presented. This question was designed to make subjects think about the different content of the various arguments presented and thus to consider several different aspects of message content.[6] Both responses to these questions and response times were recorded.

After answering the other questions (which concerned, for example, how easy or difficult the passage was to understand, whether there was adequate time in which to read it, and whether subjects would prefer to see the message all at once or sentence by sentence), subjects were asked to leave their computer booth and return to the reception room.

Mood induction. Subjects were met by a new experimenter who explained that he or she was pretesting brief video clips for use in a future study. Subjects were asked to watch one clip and answer some questions about it. Subjects in whom a positive mood was to be induced watched a 5-min comedy segment taken from the television program "Saturday Night Live." Subjects in the neutral mood condition watched a 5-min segment about winecorking. Subjects in whom negative mood was to be induced watched a 5-min segment about a summer camp for children with cancer. After watching the video, subjects were asked several questions, among them an item that served as a check on the effectiveness of the mood manipulations. Subjects responded to the question "How do you feel now?" by checking a 9-point rating scale ranging from 1 (*sad*) to 9 (*happy*). After completing the video rating task, subjects returned to their computer booths to answer some final questions about the language comprehension task.

Dependent Measures

Attitude judgments. Subjects were first asked to indicate their agreement with the statement that "offshore oil drilling in the southwestern United States should be continued." Subjects responded by marking a 9-point scale on which 1 = *strongly disagree* and 9 = *strongly agree.* Responses and response latencies were recorded.

Judgment-related thought listing. Subjects were then given a sheet of paper divided into response spaces and headed with instructions to write down all thoughts they had "while they were thinking about their answer" on the oil drilling issue. Subjects were assured they did not have to fill all the provided response spaces, and they were requested to record only those thoughts they had while actually making the judgment.

Finally, subjects responded to five questions, again presented on the computer. Subjects were asked whether their attitude response was based more on the content of the message or more on prior knowledge, whether it was based on an overall evaluation or on some specific arguments, how sure they were of their position, how important the issue was to them, and, finally, how persuasive they had found the message to be. Responses were all made on 9-point scales, and responses and response latencies were automatically recorded.

Results and Discussion

Effectiveness of Manipulations

Subjects' ratings of how happy or sad they felt immediately before assessment of the attitude judgment were analyzed in a 3 (positive, neutral, or negative mood) × 2 (strong or weak arguments) × 2 (global or detailed information easily accessible) ANOVA. This revealed a significant main effect of the mood manipulation, $F(2, 169) = 76.59$, $p < .0005$. Subjects who had watched the comedy segment reported feeling happier (M = 7.21) than both subjects who watched the wine segment (M = 6.02), $t(169) = 4.62$, $p < .0005$, and subjects who had watched the segment about children with cancer (M = 4.05), $t(169)$ = 12.30, $p < .0005$. Moreover, subjects who had watched the segment on children with cancer reported feeling less happy than subjects who had watched the wine segment, $t(169) = 7.5$, $p <$ .0005.

In addition, subjects asked to form a global evaluation by judging the quality of presented arguments rated the strong arguments as stronger (M = 6.26) than the weak arguments (M = 4.09), $F(1, 85) = 34.31$, $p < .0005$, paralleling the pretest data. No other significant main effects or interactions were obtained. Furthermore, all subjects rated strong arguments as more persuasive (M = 5.69) than weak arguments (M = 3.52), $F(2, 164) = 55.40$, $p < .001$ (all other ps > .10), in response to the last question of the experiment.

Subjects who were asked for the number of different arguments of the message estimated the message to comprise an average of 4.32 arguments. No significant main effects or interactions were found on this measure.

The time subjects needed to answer these questions was analyzed in a 3 (positive, neutral, or negative mood) × 2 (strong or weak arguments) × 2 (global evaluation or detail information) ANOVA. As intended, it took subjects longer to respond to the question about the number of different arguments in the message (M = 15.11) than to question about overall message

[6] Note that emphasizing *different* made it more likely that subjects were thinking of uncorrelated than of correlated arguments, which seems an important mediator between complexity of representations and extremity of judgments (Judd & Lusk, 1984).

strength ($M = 8.89$), $F(2,169) = 38.02$, $p < .0005$. There were no other effects.

Agreement With the Advocated Position

The primary analysis of subjects' reported agreement with the position advocated by the counterattitudinal message consisted of the planned contrast testing the differential impact of strong compared with weak arguments according to the hypotheses outlined earlier. If a global evaluation was not easily accessible, we expected to replicate consistent findings for the encoding of persuasive messages: a differential impact of strong versus weak arguments for subjects in a bad or a neutral mood, but not for subjects in a good mood. If a global evaluation was available, judgments of all subjects were expected to reflect message quality; however, this effect was expected to be more pronounced for subjects in a good or neutral mood than for subjects in a bad mood. The contrast weights used in the planned comparison and the means for agreement with the advocated position appear in Table 2.

The results of the planned contrast confirmed the prediction, producing the expected significant interaction, $t(169) = 2.10$, $p < .04$. As the means in Table 2 show, the differential impact of strong and weak arguments was dramatically pronounced for subjects in a positive mood in the global evaluation condition. Subjects in a neutral mood also appeared to rely on the global evaluation when it was easily accessible, being more influenced by it than were the negative mood subjects. When different aspects of the message content were made available in the detailed representation condition, the differential impact of strong and weak arguments was more pronounced for the neutral and negative mood subjects than for the happy subjects.

In combination, this pattern of findings indicates that subjects in a neutral mood used the representation that was most accessible at the time of judgment, producing a more pronounced impact of argument quality when they were induced to form a global rather than a detailed representation of the message. In contrast, subjects in a good mood relied on a global representation if easily accessible but did not make use of a detailed representation, resulting in the absence of an impact of argument quality under the latter condition. Thus, when global evaluations were not accessible to happy subjects the results paralleled the previously obtained effects of mood on message elaboration. This finding also strengthens our conclusion that the attitude judgments reported here were not made during encoding and merely retrieved. Although finding effects for the impact of mood at judgment eliminates the possibility that attitudes formed on-line were simply retrieved, it is possible that such attitudes could be relied on to greater or lesser extent depending on the recipient's mood state. Because of the simplicity of this retrieval strategy, subjects in a good mood might be most likely to rely on it. However, it was precisely under these conditions—when subjects were required to think about the different arguments of the message and were in a good mood when reporting their attitudes—that no differences between strong and weak arguments were obtained. We assume that lack of differentiation of strong and weak arguments at either encoding or judgment both reflect the tendency for happy subjects to simplify processing. Just as elaboration at encoding requires a considerable amount of processing, so too does retrieving the content of or responses to the message. Presumably, subjects in a good mood were unable or unwilling to engage in this processing and so the impact of message quality on attitude judgments was eliminated. Another possibility is that in simplifying the processing task, subjects in a good mood used their estimates of the number of different arguments contained in the message as a heuristic cue in forming their attitudinal responses. Given that the number of arguments was the same under both message quality conditions, this strategy would result in similar attitude judgments.

Table 2
Attitude Change as a Function of Mood, Type of Representation, and Argument Quality (Experiment 2)

	Global		Detail	
Mood	Strong	Weak	Strong	Weak
	Agreement			
Positive	5.9	3.2	3.9	4.1
Neutral	6.0	3.8	4.3	3.2
Negative	4.5	3.5	4.1	3.1
	Contrast weights			
Positive	1	−1	−2	2
Neutral	1	−1	1	−1
Negative	−2	2	1	−1

Note. The possible range of values for agreement was 1 (*strongly disagree*) to 9 (*strongly agree*).

Finally, the accessibility of a global representation had little impact on subjects in a bad mood, resulting in a similar impact of argument quality under both representation conditions.[7] Presumably, subjects in a bad mood engaged in a thorough recall of detailed information regardless of what representation had been made accessible (Schwarz, 1990), resulting in less extreme attitude judgments.

Latencies for Attitude Judgments

Raw latencies for the attitude judgments were unaffected by the experimental conditions (all Fs < 1). At first glance the absence of effects on latencies for attitude judgment may seem inconsistent with the assumption that subjects in a good mood simplified their processing. However, individuals in a good mood are assumed to engage in less effortful processing because of motivation or reduced capacity (Isen, 1987; Mackie & Worth, 1989; Schwarz, 1990), either of which might produce slower response times.

Judgment-Related Thought Listing

The thoughts subjects reported having while making their attitude judgments were coded by two independent judges.

[7] Accordingly, the simple interaction of argument quality and type of representation was most pronounced under good mood, $F(1, 169) = 8.01$, $p < .005$, and least pronounced under bad mood, $F(1, 169) = 0.01$, with the neutral mood in between, $F(1, 169) = 1.28$, $p < .26$.

Judges agreed on 90% of responses, and all disagreements were decided by a third judge. Most important, judges rated each statement as either specific or global. The first two thoughts subjects reported were analyzed in a 3 (mood) × 2 (type of message representation) ANOVA. We focused on the first two thoughts to assess which thoughts were most accessible and to avoid including global thoughts that were produced as a result of specific thoughts produced about the message. Subjects tended to report more global thoughts after they had formed a global evaluation ($M = 0.29$) than after they had thought about the number of arguments ($M = 0.17$), $F(1, 175) = 3.13$, $p < .08$. In addition, a main effect of induced mood was obtained, $F(2, 175) = 3.55$, $p < .04$, reflecting that subjects in a positive ($M = 0.32$) or neutral ($M = 0.25$) mood reported more global thought statements than did subjects in a negative mood ($M = 0.10$); $t(169) = 2.55$, $p < .02$; and $t(169) = 1.76$, $p < .08$.

Additional analyses revealed that these differences between subjects in a positive or a neutral mood and subjects in a negative mood were significant if subjects had formed a global evaluation ($M = 0.39$ and $M = 0.37$ vs. $M = 0.10$), $t(169) = 2.38$, $p < .02$, and $t(169) = 2.21$, $p < .03$, but not if subjects had thought about the number of arguments ($M = 0.25$ and $M = 0.14$ vs. $M = 0.10$), $t(169) = 1.23$, *ns*, and $t < 1$. However, the corresponding interaction did not reach significance.[8]

Presumably, subjects in a good and neutral mood were more likely to report global thoughts than subjects in a bad mood because they used these thoughts—made accessible through the global representation manipulation—for their preceding attitude judgment. Additional correlational analyses supported this conclusion: Significant relations between attitude judgments on the one hand and rated overall strength of the arguments as well as number of general (favorable or unfavorable) thoughts on the other hand were only observed for subjects in a positive and neutral mood, but not for subjects in a negative mood.[9]

General Discussion

The results of these studies provide further evidence for the assumption that individuals' mood states affect their processing of persuasive communications. More important, the results clearly demonstrate that mood effects on processing styles are not limited to a specific processing stage but do in fact have observable effects on different stages of processing. However, the effects of mood on attitude change produced by a persuasive message differs dramatically depending on the particular processes that mood influences.

At the encoding stage, recipients in a positive mood appear to simplify their processing by reducing the amount of message elaboration in which they engage. Accordingly, judgments based on this reduced processing do not reflect differences in the quality of message content. On the other hand, recipients in negative or neutral mood states are more likely to engage in a systematic processing of the content of the message, and differential effects of strong compared with weak arguments are thus obtained. Extending previous research that involved possible confounds of mood at the time of encoding and mood at the time of attitude assessment (Bless et al., 1990; Mackie & Worth, 1989; Worth & Mackie, 1987), Experiment 1 demonstrated that recipients' mood at the time of encoding is sufficient to produce the previously observed effects.

Independent of their influence on initial message elaboration, moods induced after the message was encoded also influenced attitude judgments. Although this influence resulted in a completely different pattern of attitude reports, it presumably reflects the same underlying process. Just as individuals in a good mood appear to simplify processing at encoding by failing to elaborate, the results in the relevant conditions of Experiments 1 and 2 suggest that individuals who are in a good mood at the time of attitude assessment simplify processing by failing to retrieve details of or responses to the previously encoded message. Rather, they seem to access some global evaluative representation of the message, which may serve as a heuristic cue in forming their attitude judgment. Given that judgments that are based on simple cognitive structures tend to be more extreme than judgments based on more detail (Judd & Lusk, 1984; Linville, 1982; Linville & Jones, 1980), this process resulted in an accentuated impact of message quality when subjects were in a good mood. This was the case when no specific representation was elicited (Experiment 1) as well as when a global representation was deliberately evoked (Experiment 2). Forming a detailed representation of the content of the message, on the other hand, apparently interfered with the use of this heuristic, resulting in the absence of an impact of message quality (Experiment 2) that parallels the effect of positive mood at message elaboration. Thus, message quality had an impact only when it had been incorporated into a heuristic cue that could be used to simplify processing.

In contrast, subjects in a bad mood differentiated between strong and weak arguments independently of whether mood was present when the message was encoded or when attitude judgments were reported and independently of whether a global evaluation was easily accessible or not. This suggests that subjects in a bad mood engaged in a systematic processing of the message whether at encoding or by recalling the content

---

[8] Further analyses revealed that mood inductions did not affect the total number of thoughts subjects reported ($p > .20$) for all effects involving mood. Subjects asked to think about the number of different arguments of the message reported having slightly more thoughts when the message quality was poor ($M = 4.9$) than when it was strong ($M = 4.1$), $t(169) = 1.95$, $p < .06$, whereas subjects who had formed a global evaluation reported as many thoughts when the arguments were weak ($M = 4.8$) as when they were strong ($M = 4.4$), $t < 1$, resulting in an interaction between argument quality and representation type, $F(1, 169) = 3.90$, $p < .05$. An analysis of the time subjects needed for reporting their thoughts revealed that subjects used more time when they were exposed to weak than to strong arguments ($M = 166.8$ s vs. $M = 138.8$ s), $F(1, 169) = 4.67$, $p < .04$, all other $ps > .10$.

[9] Correlations between attitude judgments and rated overall strength of arguments were as follows: For positive mood, $r = .29$, $n = 31$, $p < .06$; for neutral mood, $r = .39$, $n = 30$, $p < .02$; and for negative mood, $r = -.11$, *ns*. Correlations between attitude judgments and number of general favorable thoughts were as follows: For positive mood, $r = .42$, $n = 31$, $p < .09$; for neutral mood, $r = .28$, $n = 30$, $p < .07$; and for negative mood, $r = -.20$, *ns*. Correlations between attitude judgments and number of general unfavorable thoughts were as follows: For positive mood, $r = -.38$, $n = 31$, $p < .02$; for neutral mood, $r = -.53$, $n = 30$, $p < .01$; and for negative mood, $r = -.19$, *ns*.

and thoughts elicited by the message at the time of judgment. In fact, subjects in a bad mood apparently did not use a heuristic processing strategy even when it was made possible by the presence of an easily accessible global representation.

The present results extend a processing approach to the issue of how affective states influence persuasion (for overviews see Mackie, Asuncion, & Rosselli, in press; Mackie & Worth, 1991; Schwarz et al., 1991). Previous studies identified capacity (Isen, 1987; Mackie & Worth, 1989) and motivation (Bless et al., 1990; Schwarz, 1990) as possible antecedents of the finding that individuals in a good mood tend to simplify processing (for overviews see Fiedler, 1988; Isen, 1987; Schwarz, 1990; Schwarz & Bless, 1991), and thus show reduced elaboration at encoding, compared with subjects in a bad or neutral mood. This in turn reduces the impact of argument quality on the attitudinal outcomes of happy compared with neutral or sad subjects. The present studies extend the range of the processing analysis of mood effects in persuasion in two directions.

First, the studies provide clear evidence of mood effects on judgmental processes contributing to attitude formation and change (independently of effects at encoding). Indeed, the presented findings emphasize the importance of delineating the different stages involved in processing persuasive communications. Both experiments indicate that the elaboration of message content at encoding is not the only variable that may lead to differences in the attitudinal impact of strong and weak arguments.

Second, our findings point out the importance of specifying how information relevant to forming an attitude judgment—particularly information from persuasive messages—is represented in memory. Our data challenge the notion that attitude judgments formed or reported some time after message presentation are either retrieved from memory intact (Lingle & Ostrom, 1981) or calculated from retrieved cognitive responses made during initial encoding (Greenwald, 1968; Love & Greenwald, 1978). We argue that, in addition, subjects may also rely on nonattitudinal global representations of the message formed during encoding. Further work on this topic could benefit, as ours did, from models that address how social knowledge in other domains is represented.

In fact, the persuasion domain seems to be especially fruitful for further investigating the differential implications of affective states on processing in general. Tracing the impact of affect on many domain-specific judgments has proven difficult because little is known about the cognitive processes involved in making such judgments. In the attitude domain, however, much is now known about the various processes that underlie attitude formation or change. Our results indicate that researchers will need to dedicate more attention to isolating the impact of mood on various and multiple processing stages. The impact of affective states on cognitive processing is not limited to a single processing stage. Rather, the increased heuristic processing under positive mood, and increased systematic processing under negative mood, is likely to show different effects at different processing stages, thus adding to the complexity of the affect–cognition interplay.

References

Bless, H., Bohner, G., Schwarz, N., & Strack, F. (1990). Mood and persuasion: A cognitive response analysis. *Personality and Social Psychology Bulletin, 16,* 331–345.

Chaiken, S. (1980). Heuristic versus systematic information and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology, 39,* 752–766.

Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario symposium* (Vol. 5, pp. 3–40). Hillsdale, NJ: Erlbaum.

Ebbesen, E. B. (1980). Cognitive processes in understanding ongoing behavior. In R. Hastie, T. Ostrom, E. Ebbesen, R. Wyer, D. Hamilton, & D. Carlston (Eds.), *Person memory: A cognitive basis of social perception* (pp. 179–225). Hillsdale, NJ: Erlbaum.

Ebbesen, E. B. (1981). Cognitive processes in inferences about a person's personality. In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), *Social cognition: The Ontario symposium* (Vol. 1, pp. 247–276). Hillsdale, NJ: Erlbaum.

Fiedler, K. (1988). Emotional mood, cognitive style, and behavior regulation. In K. Fiedler & J. Forgas (Eds.), *Affect, cognition, and social behavior* (pp. 100–119). Göttingen, Federal Republic of Germany: Hogrefe.

Forgas, J. P., & Bower, G. H. (1987). Mood effects on person perception judgments. *Journal of Personality and Social Psychology, 53,* 53–60.

Greenwald, A. G. (1968). Cognitive learning, cognitive response to persuasion, and attitude change. In A. Greenwald, T. Brock, & T. Ostrom (Eds.), *Psychological foundations of attitudes* (pp. 148–170). San Diego, CA: Academic Press.

Hastie, R., & Park, B. (1986). The relationship between memory and judgment depends on whether the judgment task is memory-based or on-line. *Psychological Review, 93,* 258–268.

Hastie, R., Park, B., & Weber, R. (1984). Social memory. In R. S. Wyer, Jr. & T. K. Srull (Eds.), *Handbook of social cognition* (Vol. 2, pp. 151–212). Hillsdale, NJ: Erlbaum.

Innes, J. M., & Ahrens, C. R. (1991). Positive mood, processing goals, and the effects of information on evaluative judgment. In J. Forgas (Ed.), *Emotion and social judgment* (pp. 221–239). Elmsford, NY: Pergamon Press.

Isen, A. M. (1987). Positive affect, cognitive processes, and social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 20, pp. 203–253). San Diego, CA: Academic Press.

Judd, C. M., & Lusk, C. M. (1984). Knowledge structures and evaluative judgments: Effects of structural variables on judgment extremity. *Journal of Personality and Social Psychology, 46,* 1193–1207.

Lichtenstein, M., & Srull, T. K. (1987). Processing objectives as a determinant of the relationship between recall and judgment. *Journal of Experimental Social Psychology, 23,* 93–118.

Lingle, J. H., & Ostrom, T. M. (1981). Principles of memory and cognition in attitude formation. In R. E. Petty, T. M. Ostrom, & T. C. Brock (Eds.), *Cognitive responses in persuasion* (pp. 399–420). Hillsdale, NJ: Erlbaum.

Linville, P. W. (1982). The complexity-extremity effect and age based stereotyping. *Journal of Personality and Social Psychology, 42,* 193–211.

Linville, P. W., & Jones, E. E. (1980). Polarized appraisals of outgroup members. *Journal of Personality and Social Psychology, 38,* 698–703.

Love, R. E., & Greenwald, A. G. (1978). Cognitive responses to persuasion as mediators of opinion change. *Journal of Personality and Social Psychology, 104,* 231–241.

Mackie, D. M., & Asuncion, A. G. (1990). On-line and memory-based processing of attitude change. *Journal of Personality and Social Psychology, 59,* 5–16.

Mackie, D. M., Asuncion, A. G., & Rosselli, F. (in press). The impact of positive affect on persuasion processes. *Review of personality and social psychology* (Vol. 14). Newbury Park, CA: Sage.

Mackie, D. M., & Worth, L. T. (1989). Cognitive deficits and the mediation of positive affect in persuasion. *Journal of Personality and Social Psychology, 57,* 27–40.

Mackie, D. M., & Worth, L. T. (1991). Feeling good, but not thinking

straight: The impact of positive mood on persuasion. In J. Forgas (Ed.), *Emotion and social judgments* (pp. 201–219). Elmsford, NY: Pergamon Press.

Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and persuasion: Classic and contemporary approaches.* Dubuque, IA: William C. Brown.

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 124–203). San Diego, CA: Academic Press.

Petty, R. E., Wells, G. L., & Brock, T. C. (1976). Distraction can enhance or reduce yielding to propaganda: Thought disruption versus effort justification. *Journal of Personality and Social Psychology, 34,* 874–884.

Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 527–561). New York: Guilford Press.

Schwarz, N., & Bless, H. (1991). Happy and mindless, but sad and smart? The impact of affective states on analytic reasoning. In J. Forgas (Ed.), *Emotion and social judgments* (pp. 55–71). Elmsford, NY: Pergamon Press.

Schwarz, N., Bless, H., & Bohner, G. (1991). Mood and persuasion: Affective states influence the processing of persuasive communications. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 24, pp. 161–197). San Diego, CA: Academic Press.

Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology, 45,* 513–523.

Schwarz, N., & Clore, G. L. (1988). How do I feel about it? Informative functions of affective states. In K. Fiedler & J. Forgas (Eds.), *Affect, cognition, and social behavior* (pp. 44–62). Gottingen, Federal Republic of Germany: Hogrefe.

Slamecka, N. J., & Graf, P. (1978). The generation effect: Delineation of a phenomenon. *Journal of Experimental Psychology: Human Learning & Memory, 4,* 592–604.

Srull, T. K. (1983). Affect and memory: The impact of affective reactions in advertising on the representation of product information and memory. In R. P. Bagozzi & A. M. Tybout (Eds.), *Advances in consumer research* (Vol. 10, pp. 520–525). Ann Arbor, MI: Association for Consumer Research.

Strack, F., Schwarz, N., & Gschneidinger, E. (1985). Happiness and reminiscing: The role of time perspective, mood, and mode of thinking. *Journal of Personality and Social Psychology, 49,* 1460–1469.

Worth, L. T., & Mackie, D. M. (1987). Cognitive mediation of positive mood in persuasion. *Social Cognition, 5,* 76–94.

Wyer, R. S., & Gordon, S. E. (1984). The cognitive representation of social information. In R. S. Wyer, Jr. & T. K. Srull (Eds.), *Handbook of social cognition* (Vol. 2, pp. 73–150). Hillsdale, NJ: Erlbaum.

Wyer, R. S., & Srull, T. K. (1989). *Memory and cognition in its social context.* Hillsdale, NJ: Erlbaum.

Received January 17, 1990
Revision received March 30, 1992
Accepted April 1, 1992 ■

Mood Effects on Attitude Judgments: The Independent Effects of Mood Before and After Message Elaboration

Herbert Bless, Diane M. Mackie
und Norbert Schwarz

ZUMA-Arbeitsbericht Nr. 92/09

Zentrum für Umfragen, Methoden und
Analysen e. V. (ZUMA)
Postfach 12 21 55
D-6800 Mannheim 1

Seit Juli 1983 sind die ZUMA-Arbeitsberichte in zwei Reihen aufgeteilt:

Die ZUMA-Arbeitsberichte (neue Folge) haben eine hausinterne Begutachtung durchlaufen und werden vom Geschäftsführenden Direktor zusammen mit den übrigen Wissenschaftlichen Leitern herausgegeben. Die Berichte dieser Reihe sind zur allgemeinen Weitergabe nach außen bestimmt.

Die ZUMA-Technischen Berichte dienen zur hausinternen Kommunikation bzw. zur Unterrichtung externer Kooperationspartner. Sie sind nicht zur allgemeinen Weitergabe bestimmt.

ZUMA-ARBEITSBERICHT No. 92/09

The enclosed reprint replaces ZUMA-Arbeitsbericht No. 92/09 by the same authors.

Bless, H., Mackie, D., & Schwarz, N.

Mood effects on attitude judgments: The independent effects of mood before and after message elaboration.

Journal of Personality and Social Psychology, 1992, 63, 585-595.

Journal of Personality and Social Psychology
1992, Vol. 63, No. 4, 585-595

0022-3514/92/$3.00

Mood Effects on Attitude Judgments: Independent Effects of Mood Before and After Message Elaboration

Herbert Bless
Universität Mannheim, Mannheim, Federal Republic of Germany

Diane M. Mackie
University of California, Santa Barbara

Norbert Schwarz
Zentrum für Umfragen, Methoden und Analysen, ZUMA, Mannheim, Federal Republic of Germany

This study investigated the independent effects of induced mood on the encoding of persuasive messages and on the assessment of attitude judgments. In Experiment 1, positive or negative mood was induced either before the encoding of a counterattitudinal message or before the assessment of attitude judgments. When mood was induced before message presentation, Ss in a bad mood were more persuaded by strong than by weak arguments, whereas Ss in a good mood were equally persuaded by strong and by weak arguments. When Ss encoded the message in a neutral mood, however, the advantage of strong over weak arguments was more pronounced when Ss were in a good rather than in a bad mood at the time of attitude assessment. In Experiment 2, Ss exposed to a counterattitudinal message composed of either strong or weak arguments formed either a global evaluation or a detailed representation of the message. Positive, negative, or neutral mood was then induced. Ss in a good mood were most likely and Ss in a negative mood least likely to base their reported attitudes on global evaluations.

Using a range of different mood inductions and persuasive messages about a variety of attitudinal issues, recent studies have consistently found that recipients' processing of persuasive communications depends on their affective state. Whereas people in neutral or negative moods are differentially affected by the quality of persuasive messages and report more favorable attitudes after exposure to strong rather than weak arguments, recipients in a good mood are as persuaded by weak as strong arguments. Moreover, cognitive responses to persuasive messages reflect the quality of the presented arguments when people are in neutral or bad moods, but not when they are in good moods (Bless, Bohner, Schwarz, & Strack, 1990; Innes & Ahrens, 1991; Mackie & Worth, 1989; Worth & Mackie, 1987; for an overview see Schwarz, Bless, & Bohner, 1991).

These findings are consistent with recent models of mood effects on processing style that suggest that individuals in positive affective states tend to simplify processing tasks (for reviews see Fiedler, 1988; Isen, 1987; Schwarz, 1990). That recipients in a good mood are equally persuaded by strong and by weak arguments has accordingly been interpreted as indicating that these recipients are less likely to engage in "systematic" (Chaiken, 1980, 1987) or "central route" processing (Petty & Cacioppo, 1981, 1986; Petty, Wells, & Brock, 1976) of the content of persuasive messages. Because they appear not to elaborate the content of a message extensively, recipients in a good mood are more likely to be influenced by the use of simplifying cognitive strategies to assess message validity. This conclusion is supported by the finding that attitudes of subjects in a positive but not a neutral mood reflect the presence of heuristic cues (Mackie & Worth, 1989; Worth & Mackie, 1987). Moreover, increasing the amount of elaboration by providing additional time for processing eliminates the typical effect of positive mood (Mackie & Worth, 1989), and experimentally decreasing the amount of elaboration by introducing a distracter task produces identical attitude judgments in subjects in both positive and negative moods (Bless et al., 1990, Experiment 2).

Although the impact of mood has been attributed to its impact on encoding in all of the previously mentioned studies, it remains unclear whether mood at encoding constitutes a sufficient condition for the observed effects. In all studies, mood was induced immediately before a rather short message was presented and attitudes were assessed as soon as the presentation was completed. Thus, recipients could have been in the same affective state both when they encoded the message and when they reported their attitude judgment. Accordingly, recipients' mood at the time of encoding and at the time of attitude assessment may have been confounded in this research. Experiment 1 was designed first to investigate the crucial role of mood at encoding independent of mood at assessment, and second to explore possible mood effects that may occur after the message has been encoded.

Experiment 1 was conducted by Herbert Bless in partial fulfillment of the requirements for a doctoral dissertation, supported by Grants Schw 278/2 and Str 264/3 from the Deutsche Forschungsgemeinschaft to Norbert Schwarz and Fritz Strack. Experiment 2 was supported by a fellowship from the DAAD (German Academic Exchange Service) to Herbert Bless and by Grant MH 43041 from the National Institute of Mental Health to Diane M. Mackie.

We thank David Meisels and Lisa Minnelli for their help with data collection for Experiment 2.

Correspondence concerning this article should be addressed to Herbert Bless, FP Subjektive Erfahrung, Universität Mannheim, Steubenstrasse 46, D-6800 Mannheim, Federal Republic of Germany.

Experiment 1

If the previously obtained findings reflect only the impact of mood at encoding, the pattern of effects typically found should again be obtained when mood is induced at elaboration but allowed to dissipate before attitude assessment. That is, recipients who encode the message in a negative mood should report more favorable attitudes after exposure to strong as compared with weak arguments, whereas recipients who encode the message in a positive mood should be unaffected by argument quality.

How might recipients' mood influence attitude judgments made about material encoded before an affective state was induced? Given that sufficient message elaboration occurs during encoding, various strategies might be used when attitude judgments are later required. Moreover, different strategies might be preferred by individuals in different mood states.

Suppose that while encoding the message in a nonaffective state recipients spontaneously form an attitude judgment that reflects the differential impact of strong versus weak arguments. If so, they may simply retrieve this previously formed judgment when later asked to report their attitude (Lingle & Ostrom, 1981). If this is the case, the attitudes of subjects in both positive and negative moods should equally reflect argument quality.

Often, however, a particular judgment may not be formed during encoding because other processing objectives are required (Hastie & Park, 1986; Mackie & Asuncion, 1990), or it may not be easily accessible in memory. In such circumstances subjects have to recall attitude relevant information to compute the required judgment. At least three types of information could be retrieved.

First, subjects may try to recall as much relevant information as possible. Given the retrieval advantage of internally generated material (Slamecka & Graf, 1978) the most accessible material may well be the cognitive responses generated in response to processing the message (Greenwald, 1968; Love & Greenwald, 1978). For all intents and purposes, this retrieval strategy simulates elaboration during message presentation, and attitudes should thus reflect the quality of the arguments. Because subjects in a good mood attempt to simplify processing, they are less likely to engage in this effort than subjects in a bad or neutral mood. Accordingly, the differential impact of strong versus weak arguments should be stronger for subjects in a bad mood rather than a good mood, paralleling the effects of mood at encoding.

Second, instead of an effortful recall of reactions to message content, subjects could simply retrieve characterizations of the message that represented some kind of summary of the provided information. This might be a global evaluation of the message as weak or strong, unaccompanied by information about particular arguments or responses (that may or may not have been stored simultaneously during encoding, Ebbesen, 1980, 1981; Wyer & Srull, 1989). As judgments based on simple structures have been demonstrated to be more extreme than judgments based on more complex knowledge structures (Linville, 1982; Linville & Jones, 1980; Judd & Lusk, 1984) this strategy should result in judgments that clearly differentiate between messages comprising strong versus weak arguments. As this strategy seems to simplify cognitive processing, it should especially be preferred by subjects in positive moods. If so, the impact of argument quality may be more pronounced when subjects are in a good rather than a bad mood at the time of attitude assessment, reversing the previously obtained impact of mood at encoding.

A third possibility is that subjects attempt to retrieve information from the message or their reaction to it but that this process is influenced by their current mood state (Forgas & Bower, 1987; Srull, 1983). This would give a retrieval advantage to mood-congruent material, suggesting that subjects in a positive mood would retrieve predominantly favorable information and thus be persuaded, whereas subjects in a negative mood would retrieve predominantly unfavorable material and show no attitude change.

Finally, individuals may make the judgment by consulting their own affective state according to a "how-do-I-feel-about-it?" heuristic (Schwarz & Clore, 1983, 1988). One's subjective affective state may thus be used (either appropriately or inappropriately) as a heuristic cue. If individuals in a good mood are more likely to use such a heuristic, their judgments should be more positive than judgments of individuals in a bad mood, regardless of argument quality. In summary, the first two recall-based hypotheses predict interaction effects of mood and argument quality, whereas the last two hypotheses predict a main effect of mood.

Method

Subjects and Design

Seventy-six University of Heidelberg students received DM10 (approximately $5 at the time of the experiment) for their participation. Subjects were run in groups of 3 to 6 and were randomly assigned to the conditions of a 2 (positive or negative mood) × 2 (strong or weak arguments) × 2 (mood induced at encoding or at judgment) factorial design.

Procedure

Subjects were informed that they would be completing several different and independent tasks and that they would be asked some questions about each of the completed tasks. It was emphasized that these tasks all involved pretesting language materials for use in other studies. These tasks (described later) included (a) the mood induction, (b) the presentation of the persuasive message, (c) a neutral filler task, and (d) the assessment of dependent variables. The order in which the mood induction task and the filler task was presented was counterbalanced (as described later) to induce positive or negative mood either before message encoding or before the assessment of attitudes. Most of the experimental manipulations of Experiment 1 had been used successfully in two earlier experiments (Bless et al., 1990).

Mood induction. In this task, subjects were asked to provide a vivid and detailed written report of either a happy or a sad life event, purportedly to help with the construction of a "Heidelberg Life Event Inventory." Reporting a happy event was intended to induce positive mood, whereas focusing on an experienced sad event was intended to induce negative mood (Schwarz & Clore, 1983; Strack, Schwarz, & Gschneidinger, 1985). Subjects were given 15 min for their report and were then asked several questions about the task. Embedded among these questions was a manipulation check that read, "How do you feel right now?" (1 = *very bad* and 11 = *very good*).

Presentation of persuasive message and manipulation of argument

quality. Subjects were told that this task was concerned with language comprehension and with pretesting the comprehensibility of a particular text. Subjects listened to a tape-recorded communication that announced an increase in student services fees from DM45 to DM65 per semester (an increase of approximately $10) slated to take effect at the beginning of the next academic year at the University of Heidelberg.[1] The fee increase was justified in the communication with either 11 strong or 11 weak arguments. Differences in the quality of these sets of arguments had been convincingly demonstrated in previous studies (Bless et al., 1990). Both messages were of approximately equal length.

After listening to the message, subjects answered several questions about the presentation of the message (e.g., how acoustically clear the speaker was, how appropriate the speaker's style of speaking was, how easy or difficult the language used in the text was to understand, and how well they could concentrate on the text). None of these questions referred to the quality or content of the message.

The cover story that various texts were being pretested, the introduction of this particular task as concerning language comprehension, and the selection of questions that focused on various linguistic aspects of the message were all designed to reduce the likelihood that subjects would form attitudinal judgments during encoding of the message. As in previous research, the presentation of alternative processing goals during encoding and judgment was designed to inhibit on-line attitude formation (Hastie & Park, 1986; Lichtenstein & Srull, 1987; Mackie & Asuncion, 1990).

Neutral filler task. This task required subjects to read a text about a man having dinner at a restaurant and to reproduce this story. The content of this filler task was unrelated to the content of the persuasive message and did not include any statements potentially eliciting a positive or a negative mood state. Subjects were given 15 min to complete this task.

After completing the filler task, subjects were asked several questions, one of which again served to assess mood. Subjects responded to the item "How do you feel now?" by checking the same scale used to assess the mood manipulation.

The neutral filler task had two purposes. First, it was intended to ensure the return of subjects to a relatively neutral mood state. Thus, in the case in which the filler task followed the mood manipulation and the presentation of the persuasive message, it was designed to ensure that any mood effects present during message encoding were no longer present when attitude judgments were reported during the dependent measure task. When the filler task preceded message presentation it ensured that subjects were all in a relatively uniformly neutral mood at message presentation, regardless of their mood state on entering the experiment. The filler task also served to equate the passage of time spent on the mood induction task so that regardless of order condition, 15 min elapsed between presentation of the persuasive communication and the assessment of the dependent measures.

Induction of mood before or after message presentation. The order in which the mood induction task and the filler task was presented was counterbalanced. For half the subjects the mood induction immediately preceded the presentation of the message and the filler task followed message presentation. In this condition, induced mood was intended to be present at encoding of the persuasive message but to have dissipated before the dependent measures were assessed. For the other half of the subjects, the filler task preceded message presentation, and the mood induction followed the message but immediately preceded assessment of the dependent variables. In this condition, it was intended that mood effects would not be present during encoding but would be present during the assessment of dependent measures.

Dependent Measures

Attitude judgment. Before answering other questions subjects indicated their approval of the anticipated increase in student fees by checking a 9-point rating scale where 1 indicated *strongly disapprove* and 9, *strongly approve.*

Cognitive responses. Subjects were then given 3 min in which to list "all thoughts that came to mind *while* listening to the tape recording." Subjects were provided with a sheet of paper divided into 10 boxes and were instructed to list only one thought per box. Subjects were not required to use all the boxes. After completing the thought listing, subjects indicated whether each thought they had listed was *favorable* (supportive of the proposed fee increase), *unfavorable* (opposed to the increase), or *neutral* (unrelated to the issue).

Recall of message content. Finally, in a surprise recall test, subjects were given 3 min in which to write down any and all the presented arguments they could remember.

Results

Effectiveness of Mood Manipulations

Responses to the items assessing subjects' mood before message presentation and before attitude assessment were analyzed by two analyses of variance (ANOVAs).

Mood at encoding. Subjects' self reports of subjective state immediately before being exposed to the persuasive communication revealed a significant main effect for mood, $F(2, 61)^2 = 6.55$, $p < .003$, as expected. Subjects who had described a positive life event reported being in a better mood ($M = 7.8$) than both subjects who had described a negative life event ($M = 5.9$), $t(61) = 3.61$, $p < .0005$, and subjects who had worked on the filler task ($M = 7.1$), $t(61) = 1.70$, $p < .05$. In addition, subjects who had described a negative life event reported being sadder than subjects who had worked on the filler task, $t(61) = -2.32$, $p < .02$ (all comparisons one-tailed). Thus, mood was successfully manipulated before presentation of the persuasive communication.

Mood at assessment of attitudes. The responses of subjects who had described life events immediately before assessment of the dependent measures also revealed a main effect for induced mood, $F(2, 72) = 7.33$, $p < .002$. Those who described a positive life event reported being in a better mood ($M = 8.7$) than both subjects who had described a negative life event ($M = 6.3$), $t(72) = 3.73$, $p < .0005$, and subjects who had worked on the filler task ($M = 7.1$), $t(72) = 2.86$, $p < .003$. In addition, subjects who had worked on the filler task reported marginally better mood than subjects who had described a negative life event, $t(75) = -1.46$, $p < .08$ (all comparisons one-tailed). Mood had thus been successfully induced immediately before assessment of the dependent measures. In addition, the comparisons with reports from subjects completing the neutral filler task indicated that the effects of mood induced before message presentation had dissipated before attitude assessment, as intended.

---

[1] Although an increase of DM20 may seem slight, it should be noted that the last actual fee increase of DM11 in 1982 caused massive student protests. The proposed increase was thus clearly counterattitudinal for the subjects.

[2] Eleven subjects in the mood at judgment condition did not fully complete the neutral filler task before message presentation. The responses of these subjects did not differ from those of other subjects in this condition on any dependent variable (all $ps > .20$) and were included in the analysis.

Attitude Change

The influence of the persuasive communication was inferred from recipients' approval of the suggested fee increase. Mean approval scores appear in Table 1 as a function of induced mood, timing of mood induction, and argument quality.

The extent to which subjects agreed with the advocated increase was analyzed in a 2 (mood) × 2 (timing of mood induction) × 2 (argument quality) between-subjects ANOVA. Subjects reported greater approval of the fee increase after hearing strong (M = 4.16) as compared with weak (M = 2.28) arguments, $F(1, 68) = 22.75$, $p < .005$. As predicted, however, this differential effect of argument quality was affected by both the induced mood and the timing of the mood induction, as revealed by a significant three-way interaction involving these factors, $F(1, 68) = 6.94$, $p < .02$. To clarify these effects, further analyses were performed to investigate the independent effects of mood at the time of encoding and at the time of judgment.

Mood at encoding. A simple effects analysis revealed a main effect of message quality, $F(1, 68) = 3.95$, $p < .05$, qualified by a marginally significant interaction between the valence of the mood induced before message presentation and the quality of arguments presented in the message, $F(1, 68) = 3.29$, $p < .07$. Specifically, strong arguments were more influential than weak arguments when subjects were in a bad mood at the time of encoding of the message, $t(68) = 2.68$, $p < .009$, but argument quality had no impact when subjects were in a good mood at that time ($t < 1$). Thus, when mood was induced at encoding and had dissipated by the time judgments were reported, the pattern of results replicated previous findings (Bless et al., 1990; Mackie & Worth, 1989; Worth & Mackie, 1987). This finding demonstrates that recipients' mood at encoding is sufficient to produce the previously reported effects, given that the induced mood states had dissipated by the time of the attitude report.

Mood at assessment of attitude judgment. When mood was manipulated immediately before attitude judgments were assessed, strong arguments produced more approval than weak arguments for all subjects (M = 4.5 vs. M = 2.0), $F(1, 68) = 21.76$, $p < .001$, for the simple main effect. However, this effect was even more pronounced for subjects in a good mood (M = 5.2 and M = 1.6 for strong and weak arguments, respectively), $t(68) = 4.65$, $p < .0005$, than for subjects in a bad mood (M = 3.8 and M = 2.3 for strong and weak arguments, respectively), $t(68) = 1.95$, $p < .06$. This pattern is reflected in a marginally significant simple interaction, $F(1, 68) = 3.67$, $p < .06$, indicating that mood induction at the time of judgment was also capable of influencing persuasion outcomes.

Cognitive Responses and Message Recall

The proportion of favorable and unfavorable thoughts in response to strong and weak arguments during encoding was influenced by the nature and timing of the induced mood state. Overall, subjects reported a higher proportion of favorable thoughts in response to strong than to weak arguments (M = 0.29 vs. 0.13), $F(1, 68) = 11.40$, $p < .001$, and a lower proportion of unfavorable thoughts (M = 0.38 vs. 0.57), $F(1, 68) = 10.86$, $p < .002$.

More important, however, these main effects were qualified by the impact of both induced mood and the timing of the mood induction, indicated by marginal interaction effects for both favorable responses, $F(1, 68) = 3.59$, $p < .07$, and unfavorable responses, $F(1, 68) = 2.59$, $p < .12$. Replicating previous research, strong arguments elicited a higher proportion of favorable and a smaller proportion of unfavorable thoughts than weak arguments when subjects were in a negative (Bless et al., 1990) or a neutral mood (Mackie & Worth, 1989; Worth & Mackie, 1987) but not when subjects were in a good mood while encoding the message.[3,4]

Table 1
Attitude Change as a Function of Mood, Timing of Mood Induction, and Argument Quality (Experiment 1)

	Timing of mood induction			
	Mood before encoding		Mood before judgment	
Argument type	Positive	Negative	Positive	Negative
Strong	3.6	4.1	5.2	3.8
Weak	3.4	1.9	1.6	2.3

Note. The possible range of values for approval was 1 (*strongly disapprove*) to 9 (*strongly approve*).

Discussion

The present results demonstrate that recipients' mood state can affect attitude judgments either by influencing the encoding of the message or by influencing processes independent of initial message elaboration. In contrast with all other subjects, subjects in a good mood during message encoding did not show differential attitude change nor differential cognitive responses to messages containing strong or weak arguments. This finding adds further support to the idea that recipients in a good mood simplify processing by reducing the amount of message elaboration (for an overview see Schwarz et al., 1991). More important, the results extend previous findings in two ways. First, given that the induced mood state had dissipated by the time attitudes were reported, the findings indicate recipients' mood at encoding is by itself sufficient to produce the previously re-

[3] Specifically, subjects in a negative mood reported a higher proportion of favorable thoughts and a lower proportion of unfavorable after strong than after weak arguments (M = 0.33 vs. M = 0.07 and M = 0.35 vs. M = 0.54), $t(68) = 2.57$, $p < .02$, and $t(68) = -1.49$, *ns*. These differences were not obtained for subjects who were in a good mood during message exposure (M = 0.19 vs. M = 0.24 and M = 0.46 vs. M = 0.53), both $ts < 1$. Subjects in a neutral mood while encoding, that is, those for whom mood was induced after encoding, reported a higher proportion of favorable thoughts and a lower proportion of unfavorable after strong than after weak arguments (M = 0.32 vs. M = 0.11 and M = 0.35 vs. M = 0.60), $t(68) = 3.23$, $p < .01$, and $t(68) = 3.17$ $p < .01$.

[4] Subjects' recall of the presented arguments was unaffected by their affective state. Overall, strong arguments were better recalled (M = 7.2) than weak arguments (M = 6.1), $F(1, 68) = 20.45$, $p < .005$, but no other effects of the variables on total recall were found, again paralleling previous findings (Bless et al., 1990).

ported effects of positive mood on persuasive processing. Second, the present results also suggest that happy recipients cannot later compensate for their lack of message elaboration, even if the attitude judgment is required when the initial affective state has dissipated.

The impact of induced mood was not restricted to the encoding stage, however. When a positive or negative mood was induced after subjects had encoded the message in a neutral mood, the advantage of strong over weak arguments was more pronounced for subjects in a good mood. This occurred despite the fact that subjects' recall of and cognitive responses to message content were not affected by postmessage mood inductions, indicating that all subjects had encoded and elaborated the message to the same degree, as intended. Our results thus indicate that moods may affect judgmental processes, and hence the effectiveness of persuasive communications, even if they are induced after the persuasive message has been encoded.

The pattern of attitude outcomes we obtained under these conditions allowed us to eliminate several processing pathways by which affect induced at judgment could have had its effects. First, the fact that mood effects were obtained eliminates the possibility that subjects had formed attitudes on-line and were merely reporting those previously formed judgments. If this had been the case, there would have been no evidence of mood effects on outcomes, as all subjects processed the message in a neutral mood. This finding confirms the effectiveness of the technique of presenting subjects with other processing goals for inhibiting on-line judgments (Hastie & Park, 1986; Lichtenstein & Srull, 1987; Mackie & Asuncion, 1990). Second, the obtained pattern eliminated the possibility that subjects retrieved cognitive responses previously elicited by the message to simulate on-line elaboration. Again, if this were the case, all subjects should have produced similar judgments, as all subjects encoded the message under identical conditions. Finally, the failure to find a main effect that reflected greater persuasion in the positive mood condition eliminated two other possibilities. Both biased retrieval of mood-congruent responses or reliance on the how-do-I-feel-about-it? heuristic would have produced such a pattern. Thus, it appears that neither of these possibilities can explain the impact that mood induced before judgment had on attitudinal outcomes.

In summary, the impact of induced mood state produced diametrically opposed patterns depending on when mood was induced: The differential impact of strong versus weak arguments was decreased when positive mood was induced before message presentation, whereas it was increased when positive mood was induced after message presentation but before the assessment of attitude judgments. We propose that both effects are due to subjects' tendency to reduce cognitive effort while being in a good mood. When mood is induced before exposure to the message, good mood results in reduced elaboration of message content. When mood is induced after message encoding but before attitude assessment, it presumably affects what information subjects use in making a judgment. Specifically, our findings suggest that although subjects who encoded the message in a neutral mood had similar representations of the message available, subjects in different mood conditions based their judgment on different aspects of this representation. The obtained pattern suggested that the impact of positive mood was to rely on some representation that further strengthened the impact of argument quality, yet did not involve mood-specific retrieval of arguments from or reactions to the message. Thus, in the second experiment we turned our attention to investigating what representations of message content formed during encoding may have been used by subjects in a positive mood at judgment to produce the obtained effects.

Experiment 2

Unfortunately, previous research has had little to say about how persuasive messages are represented in memory or about the way in which retrieval of different types of information can influence attitude judgments. Relevant hypotheses can be derived, however, from research in other domains (Hastie, Park, & Weber, 1984; Wyer & Gordon, 1984; Wyer & Srull, 1989). There is increasing agreement across models that representation of social information may simultaneously contain both global and specific information. For example, Ebbesen (1980, 1981) and Wyer and Srull (1989) have argued that both global impressions of and individual behaviors performed by target persons may be stored during encoding and that either can be used as the basis for judgments. Using these assumptions as a parallel, we suggest that representations of attitude-relevant information in a persuasive message could include global evaluations (e.g., "This was pretty convincing.") or more detailed information (such as presented arguments, cognitive responses to them, and other details of the persuasive context), or both. If so, attitude judgments might be based on different representations of the same message. Moreover, subjects' processing strategy may determine which representation is used, which in turn may determine the resulting attitude judgment.

In many situations in which on-line attitude change occurs, it is likely that one of the global judgments formed and encoded is an attitude judgment, either a new judgment or a modification of a previously held opinion. The encoding conditions we induced, however, inhibited the formation of on-line attitudes (as indicated by the results of Experiment 1). What global representations of the message might have been formed spontaneously in this case? Given that we explicitly directed subjects to the nature of the language used in the message, it is likely that global evaluations of the language and arguments as strong and powerful ("Those were pretty good arguments.") or weak and specious ("Those arguments were pathetic.") may well have been formed.[5] Thus, such summary evaluations—as well as specific arguments and cognitive responses—might have been stored after encoding and may have been available for later use in making an attitude judgment.

What, however, would be the effect of retrieving global representations of a persuasive message? In fact, reliance on global evaluations might produce judgments that are more extreme

[5] The formation of a global evaluation of the message ("it was a strong message" or "there wasn't much to support the position") does not entail the formation of an attitude judgment about the issue, as evidenced by the independence of perceptions of the quality of arguments and their effects on attitude change (Bless et al., 1990; Mackie & Worth, 1989).

than those based on careful processing of details of the message. Evidence for this assumption is provided by findings suggesting that judgments are more likely to be extreme if they are based on simple knowledge structures and schemata rather than on more complex knowledge structures (Judd & Lusk, 1984; Linville, 1982; Linville & Jones, 1980). It is argued that relying on simple representations decreases the number of different dimensions used in the judgment. Thus, it becomes more likely that moderating or inconsistent information is omitted. By the same argument, complex representations including multiple dimensions increase the likelihood of moderate, less extreme judgments. In the persuasive context, then, reliance on retrieval of the message's content would produce a main effect for argument quality. However, not all arguments may appear equally strong or weak to all recipients. To the extent that recipients rely on global evaluations, these (partially idiosyncratic) differences in the strength of individual arguments may be missed. As a result, the use of global evaluations may accentuate differences between messages, resulting in significantly stronger effects of overall argument quality in attitude judgments.

At least two factors may influence which type of message representation will be used in making attitudinal judgments. First, a representation is more likely to be used if its accessibility is increased (Wyer & Srull, 1989). For example, any representation that has been recently formed, used, or activated in some way is more likely to provide the basis for a judgment than is less accessible material.

Second, the use of different representations may depend on the degree to which the perceiver chooses to or is able to allocate resources to the judgment process. Retrieving the numerous detailed and specific arguments and thoughts elicited by the message content requires a considerable amount of processing. Not only must repeated retrieval be sustained, but the independent pieces of retrieved information need to be combined. In contrast, an already existing global evaluation can serve as a single cue on which attitude judgments are made. Thus, global evaluations may have more impact when other variables decrease the amount of processing. In contrast, variables that increase the amount of processing should make it more likely that thoughts elicited by the message will be reconsidered.

These considerations provide a tentative explanation for the results obtained in our first experiment. As noted earlier, previous evidence suggests that individuals in a positive mood tend to simplify their processing and rely on the use of simple heuristics (Fiedler, 1988; Isen, 1987; Schwarz, 1990). If so, little attention may be allocated to judgment processes (just as positive mood at encoding results in reduced elaboration), and happy subjects should be more likely to use a global evaluation as a heuristic cue to an appropriate attitude judgment. This in turn would result in more extreme judgments. The use of global evaluations as a basis for making later attitude judgments thus provides a possible explanation of the increased impact of message quality found under the elated mood at judgment conditions of Experiment 1.

The mediating role of reliance on different message representations as a possible explanation of our findings was tested more directly in Experiment 2. In addition to manipulating induced mood and the strength of presented arguments, we manipulated the accessibility of different message representations. This was accomplished by requiring subjects either to judge the message as a whole on the dimension of quality or to consider the multiple and different arguments comprising the message. Whereas the former task should result in a global evaluative representation of the message, the latter task should result in a more detailed representation. In the neutral mood condition, we expected subjects to rely more on the detailed or on the global representation, depending on which one was rendered more accessible by the preceding task. Thus, we expected to see an effect for argument quality when the detailed representation was accessible and an even greater effect of message quality when global evaluations were accessible.

The accessibility of different representations was expected to have different effects in the affective conditions, however. The accessibility of a global evaluation absolves subjects in a positive mood from doing extensive processing; thus, they are likely to rely heavily on it and we expected a strong effect for message quality in this condition. If a global evaluation is not easily accessible, however, attitude judgments can only be based on the more difficult recall and integration of the arguments and thoughts stored in the detailed representation. As individuals in a good mood are less likely to engage in this effortful process, their attitudes should not reflect message quality when the detailed representation is most accessible.

In contrast, if individuals in negative affective states are more likely to engage in a more systematic and effortful processing (Fiedler, 1988; Schwarz, 1990), they should engage in a thorough recall of all information they can remember. Thus, the absence or presence of an easily accessible global evaluation should have little impact on their attitude judgments, which should reflect argument quality independently of the type of representation formed.

Based on these considerations, we made the following predictions. When a global evaluation was accessible, we expected it to be used by subjects in a good and in a neutral mood, but not by subjects in a bad mood. Thus, we expected attitude judgments of subjects in a good or a neutral mood to reflect the overall quality of the arguments more strongly than attitude judgments of subjects in a bad mood. In contrast, when a detailed representation of the message was made easily accessible, we expected subjects in a neutral and a bad mood, but not subjects in a good mood, to use recalled details in computing an attitude judgment. Accordingly, attitude judgments of subjects in a bad and a neutral mood, but not of subjects in a good mood, should reflect message quality under this condition.

Method

Subjects and Design

One hundred eighty-one introductory psychology students at the University of California, Santa Barbara (UCSB), received partial credit for their participation. Subjects were randomly assigned to the conditions of a 3 (positive, neutral, or negative mood at the time of judgment) × 2 (strong or weak arguments) × 2 (global evaluation or detailed representation) factorial design. Subjects were run in groups of 3 to 6.

Procedure

Subjects assembled in a reception room and were told that they would be asked to complete a number of unrelated tasks. These tasks included the viewing and evaluation of materials presented both by video and on a computer screen. Subjects were seated individually in visually isolated computer booths. Each booth contained an IBM PC-XT, which presented further instructions and stimulus materials relevant to the first task.

Message presentation and manipulation of argument quality. Subjects read that the first task concerned language comprehension. They then initiated presentation of a persuasive message advocating continued oil drilling off the southwestern coast of the United States (a position that pretesting had established as counterattitudinal for the majority of UCSB students). The position taken in the message appeared first and was followed by a series of arguments, each of which was presented individually for a fixed amount of time. Half of the subjects saw arguments that pretesting had demonstrated to be strong (M = 11.2, where 15 = *very strong*). The other half saw arguments pretested as weak (M = 7.3), $F(1, 13) = 40.84$, $p < .0001$. The two versions of the message were approximately equal in length.

Manipulation of message representation. After reading the message, subjects were asked to answer four questions, ostensibly assessing language comprehension. Only the last of these questions in fact referred to the content of the message, and this question was designed to induce subjects to form either a global evaluation or to think about the details of the message content. Half the subjects were asked to think about "the strength of the arguments you saw" and to rate the strength or weakness of the arguments using a 9-point rating scale where 9 indicated *very strong.* This question was intended to have subjects form a global evaluation related only to the strength of the arguments contained in the message. The other half of the subjects were asked to think about the different arguments presented in the message and to indicate how many different arguments had been presented. This question was designed to make subjects think about the different content of the various arguments presented and thus to consider several different aspects of message content.[6] Both responses to these questions and response times were recorded.

After answering the other questions (which concerned, for example, how easy or difficult the passage was to understand, whether there was adequate time in which to read it, and whether subjects would prefer to see the message all at once or sentence by sentence), subjects were asked to leave their computer booth and return to the reception room.

Mood induction. Subjects were met by a new experimenter who explained that he or she was pretesting brief video clips for use in a future study. Subjects were asked to watch one clip and answer some questions about it. Subjects in whom a positive mood was to be induced watched a 5-min comedy segment taken from the television program "Saturday Night Live." Subjects in the neutral mood condition watched a 5-min segment about winecorking. Subjects in whom negative mood was to be induced watched a 5-min segment about a summer camp for children with cancer. After watching the video, subjects were asked several questions, among them an item that served as a check on the effectiveness of the mood manipulations. Subjects responded to the question "How do you feel now?" by checking a 9-point rating scale ranging from 1 (*sad*) to 9 (*happy*). After completing the video rating task, subjects returned to their computer booths to answer some final questions about the language comprehension task.

Dependent Measures

Attitude judgments. Subjects were first asked to indicate their agreement with the statement that "offshore oil drilling in the southwestern United States should be continued." Subjects responded by marking a 9-point scale on which 1 = *strongly disagree* and 9 = *strongly agree.* Responses and response latencies were recorded.

Judgment-related thought listing. Subjects were then given a sheet of paper divided into response spaces and headed with instructions to write down all thoughts they had "while they were thinking about their answer" on the oil drilling issue. Subjects were assured they did not have to fill all the provided response spaces, and they were requested to record only those thoughts they had while actually making the judgment.

Finally, subjects responded to five questions, again presented on the computer. Subjects were asked whether their attitude response was based more on the content of the message or more on prior knowledge, whether it was based on an overall evaluation or on some specific arguments, how sure they were of their position, how important the issue was to them, and, finally, how persuasive they had found the message to be. Responses were all made on 9-point scales, and responses and response latencies were automatically recorded.

Results and Discussion

Effectiveness of Manipulations

Subjects' ratings of how happy or sad they felt immediately before assessment of the attitude judgment were analyzed in a 3 (positive, neutral, or negative mood) × 2 (strong or weak arguments) × 2 (global or detailed information easily accessible) ANOVA. This revealed a significant main effect of the mood manipulation, $F(2, 169) = 76.59$, $p < .0005$. Subjects who had watched the comedy segment reported feeling happier (M = 7.21) than both subjects who watched the wine segment (M = 6.02), $t(169) = 4.62$, $p < .0005$, and subjects who had watched the segment about children with cancer (M = 4.05), $t(169)$ = 12.30, $p < .0005$. Moreover, subjects who had watched the segment on children with cancer reported feeling less happy than subjects who had watched the wine segment, $t(169) = 7.5$, $p <$ .0005.

In addition, subjects asked to form a global evaluation by judging the quality of presented arguments rated the strong arguments as stronger (M = 6.26) than the weak arguments (M = 4.09), $F(1, 85) = 34.31$, $p < .0005$, paralleling the pretest data. No other significant main effects or interactions were obtained. Furthermore, all subjects rated strong arguments as more persuasive (M = 5.69) than weak arguments (M = 3.52), $F(2, 164) = 55.40$, $p < .001$ (all other $ps > .10$), in response to the last question of the experiment.

Subjects who were asked for the number of different arguments of the message estimated the message to comprise an average of 4.32 arguments. No significant main effects or interactions were found on this measure.

The time subjects needed to answer these questions was analyzed in a 3 (positive, neutral, or negative mood) × 2 (strong or weak arguments) × 2 (global evaluation or detail information) ANOVA. As intended, it took subjects longer to respond to the question about the number of different arguments in the message (M = 15.11) than to question about overall message

[6] Note that emphasizing *different* made it more likely that subjects were thinking of uncorrelated than of correlated arguments, which seems an important mediator between complexity of representations and extremity of judgments (Judd & Lusk, 1984).

strength ($M = 8.89$), $F(2, 169) = 38.02$, $p < .0005$. There were no other effects.

Agreement With the Advocated Position

The primary analysis of subjects' reported agreement with the position advocated by the counterattitudinal message consisted of the planned contrast testing the differential impact of strong compared with weak arguments according to the hypotheses outlined earlier. If a global evaluation was not easily accessible, we expected to replicate consistent findings for the encoding of persuasive messages: a differential impact of strong versus weak arguments for subjects in a bad or a neutral mood, but not for subjects in a good mood. If a global evaluation was available, judgments of all subjects were expected to reflect message quality; however, this effect was expected to be more pronounced for subjects in a good or neutral mood than for subjects in a bad mood. The contrast weights used in the planned comparison and the means for agreement with the advocated position appear in Table 2.

The results of the planned contrast confirmed the prediction, producing the expected significant interaction, $t(169) = 2.10$, $p < .04$. As the means in Table 2 show, the differential impact of strong and weak arguments was dramatically pronounced for subjects in a positive mood in the global evaluation condition. Subjects in a neutral mood also appeared to rely on the global evaluation when it was easily accessible, being more influenced by it than were the negative mood subjects. When different aspects of the message content were made available in the detailed representation condition, the differential impact of strong and weak arguments was more pronounced for the neutral and negative mood subjects than for the happy subjects.

In combination, this pattern of findings indicates that subjects in a neutral mood used the representation that was most accessible at the time of judgment, producing a more pronounced impact of argument quality when they were induced to form a global rather than a detailed representation of the message. In contrast, subjects in a good mood relied on a global representation if easily accessible but did not make use of a detailed representation, resulting in the absence of an impact of argument quality under the latter condition. Thus, when global evaluations were not accessible to happy subjects the results paralleled the previously obtained effects of mood on message elaboration. This finding also strengthens our conclusion that the attitude judgments reported here were not made during encoding and merely retrieved. Although finding effects for the impact of mood at judgment eliminates the possibility that attitudes formed on-line were simply retrieved, it is possible that such attitudes could be relied on to greater or lesser extent depending on the recipient's mood state. Because of the simplicity of this retrieval strategy, subjects in a good mood might be most likely to rely on it. However, it was precisely under these conditions—when subjects were required to think about the different arguments of the message and were in a good mood when reporting their attitudes—that no differences between strong and weak arguments were obtained. We assume that lack of differentiation of strong and weak arguments at either encoding or judgment both reflect the tendency for happy subjects to simplify processing. Just as elaboration at encoding requires a considerable amount of processing, so too does retrieving the content of or responses to the message. Presumably, subjects in a good mood were unable or unwilling to engage in this processing and so the impact of message quality on attitude judgments was eliminated. Another possibility is that in simplifying the processing task, subjects in a good mood used their estimates of the number of different arguments contained in the message as a heuristic cue in forming their attitudinal responses. Given that the number of arguments was the same under both message quality conditions, this strategy would result in similar attitude judgments.

Table 2
Attitude Change as a Function of Mood, Type of Representation, and Argument Quality (Experiment 2)

	Global		Detail	
Mood	Strong	Weak	Strong	Weak
	Agreement			
Positive	5.9	3.2	3.9	4.1
Neutral	6.0	3.8	4.3	3.2
Negative	4.5	3.5	4.1	3.1
	Contrast weights			
Positive	1	−1	−2	2
Neutral	1	−1	1	−1
Negative	−2	2	1	−1

Note. The possible range of values for agreement was 1 (*strongly disagree*) to 9 (*strongly agree*).

Finally, the accessibility of a global representation had little impact on subjects in a bad mood, resulting in a similar impact of argument quality under both representation conditions.[7] Presumably, subjects in a bad mood engaged in a thorough recall of detailed information regardless of what representation had been made accessible (Schwarz, 1990), resulting in less extreme attitude judgments.

Latencies for Attitude Judgments

Raw latencies for the attitude judgments were unaffected by the experimental conditions (all Fs < 1). At first glance the absence of effects on latencies for attitude judgment may seem inconsistent with the assumption that subjects in a good mood simplified their processing. However, individuals in a good mood are assumed to engage in less effortful processing because of motivation or reduced capacity (Isen, 1987; Mackie & Worth, 1989; Schwarz, 1990), either of which might produce slower response times.

Judgment-Related Thought Listing

The thoughts subjects reported having while making their attitude judgments were coded by two independent judges.

[7] Accordingly, the simple interaction of argument quality and type of representation was most pronounced under good mood, $F(1, 169) = 8.01$, $p < .005$, and least pronounced under bad mood, $F(1, 169) = 0.01$, with the neutral mood in between, $F(1, 169) = 1.28$, $p < .26$.

Judges agreed on 90% of responses, and all disagreements were decided by a third judge. Most important, judges rated each statement as either specific or global. The first two thoughts subjects reported were analyzed in a 3 (mood) × 2 (type of message representation) ANOVA. We focused on the first two thoughts to assess which thoughts were most accessible and to avoid including global thoughts that were produced as a result of specific thoughts produced about the message. Subjects tended to report more global thoughts after they had formed a global evaluation ($M = 0.29$) than after they had thought about the number of arguments ($M = 0.17$), $F(1, 175) = 3.13$, $p < .08$. In addition, a main effect of induced mood was obtained, $F(2, 175) = 3.55$, $p < .04$, reflecting that subjects in a positive ($M = 0.32$) or neutral ($M = 0.25$) mood reported more global thought statements than did subjects in a negative mood ($M = 0.10$); $t(169) = 2.55$, $p < .02$; and $t(169) = 1.76$, $p < .08$.

Additional analyses revealed that these differences between subjects in a positive or a neutral mood and subjects in a negative mood were significant if subjects had formed a global evaluation ($M = 0.39$ and $M = 0.37$ vs. $M = 0.10$), $t(169) = 2.38$, $p < .02$, and $t(169) = 2.21$, $p < .03$, but not if subjects had thought about the number of arguments ($M = 0.25$ and $M = 0.14$ vs. $M = 0.10$), $t(169) = 1.23$, *ns*, and $t < 1$. However, the corresponding interaction did not reach significance.[8]

Presumably, subjects in a good and neutral mood were more likely to report global thoughts than subjects in a bad mood because they used these thoughts—made accessible through the global representation manipulation—for their preceding attitude judgment. Additional correlational analyses supported this conclusion: Significant relations between attitude judgments on the one hand and rated overall strength of the arguments as well as number of general (favorable or unfavorable) thoughts on the other hand were only observed for subjects in a positive and neutral mood, but not for subjects in a negative mood.[9]

General Discussion

The results of these studies provide further evidence for the assumption that individuals' mood states affect their processing of persuasive communications. More important, the results clearly demonstrate that mood effects on processing styles are not limited to a specific processing stage but do in fact have observable effects on different stages of processing. However, the effects of mood on attitude change produced by a persuasive message differs dramatically depending on the particular processes that mood influences.

At the encoding stage, recipients in a positive mood appear to simplify their processing by reducing the amount of message elaboration in which they engage. Accordingly, judgments based on this reduced processing do not reflect differences in the quality of message content. On the other hand, recipients in negative or neutral mood states are more likely to engage in a systematic processing of the content of the message, and differential effects of strong compared with weak arguments are thus obtained. Extending previous research that involved possible confounds of mood at the time of encoding and mood at the time of attitude assessment (Bless et al., 1990; Mackie & Worth, 1989; Worth & Mackie, 1987), Experiment 1 demonstrated that recipients' mood at the time of encoding is sufficient to produce the previously observed effects.

Independent of their influence on initial message elaboration, moods induced after the message was encoded also influenced attitude judgments. Although this influence resulted in a completely different pattern of attitude reports, it presumably reflects the same underlying process. Just as individuals in a good mood appear to simplify processing at encoding by failing to elaborate, the results in the relevant conditions of Experiments 1 and 2 suggest that individuals who are in a good mood at the time of attitude assessment simplify processing by failing to retrieve details of or responses to the previously encoded message. Rather, they seem to access some global evaluative representation of the message, which may serve as a heuristic cue in forming their attitude judgment. Given that judgments that are based on simple cognitive structures tend to be more extreme than judgments based on more detail (Judd & Lusk, 1984; Linville, 1982; Linville & Jones, 1980), this process resulted in an accentuated impact of message quality when subjects were in a good mood. This was the case when no specific representation was elicited (Experiment 1) as well as when a global representation was deliberately evoked (Experiment 2). Forming a detailed representation of the content of the message, on the other hand, apparently interfered with the use of this heuristic, resulting in the absence of an impact of message quality (Experiment 2) that parallels the effect of positive mood at message elaboration. Thus, message quality had an impact only when it had been incorporated into a heuristic cue that could be used to simplify processing.

In contrast, subjects in a bad mood differentiated between strong and weak arguments independently of whether mood was present when the message was encoded or when attitude judgments were reported and independently of whether a global evaluation was easily accessible or not. This suggests that subjects in a bad mood engaged in a systematic processing of the message whether at encoding or by recalling the content

---

[8] Further analyses revealed that mood inductions did not affect the total number of thoughts subjects reported ($p > .20$) for all effects involving mood. Subjects asked to think about the number of different arguments of the message reported having slightly more thoughts when the message quality was poor ($M = 4.9$) than when it was strong ($M = 4.1$), $t(169) = 1.95$, $p < .06$, whereas subjects who had formed a global evaluation reported as many thoughts when the arguments were weak ($M = 4.8$) as when they were strong ($M = 4.4$), $t < 1$, resulting in an interaction between argument quality and representation type, $F(1, 169) = 3.90$, $p < .05$. An analysis of the time subjects needed for reporting their thoughts revealed that subjects used more time when they were exposed to weak than to strong arguments ($M = 166.8$ s vs. $M = 138.8$ s), $F(1, 169) = 4.67$, $p < .04$, all other $ps > .10$.

[9] Correlations between attitude judgments and rated overall strength of arguments were as follows: For positive mood, $r = .29$, $n = 31$, $p < .06$; for neutral mood, $r = .39$, $n = 30$, $p < .02$; and for negative mood, $r = -.11$, *ns*. Correlations between attitude judgments and number of general favorable thoughts were as follows: For positive mood, $r = .42$, $n = 31$, $p < .09$; for neutral mood, $r = .28$, $n = 30$, $p < .07$; and for negative mood, $r = -.20$, *ns*. Correlations between attitude judgments and number of general unfavorable thoughts were as follows: For positive mood, $r = -.38$, $n = 31$, $p < .02$; for neutral mood, $r = -.53$, $n = 30$, $p < .01$; and for negative mood, $r = -.19$, *ns*.

and thoughts elicited by the message at the time of judgment. In fact, subjects in a bad mood apparently did not use a heuristic processing strategy even when it was made possible by the presence of an easily accessible global representation.

The present results extend a processing approach to the issue of how affective states influence persuasion (for overviews see Mackie, Asuncion, & Rosselli, in press; Mackie & Worth, 1991; Schwarz et al., 1991). Previous studies identified capacity (Isen, 1987; Mackie & Worth, 1989) and motivation (Bless et al., 1990; Schwarz, 1990) as possible antecedents of the finding that individuals in a good mood tend to simplify processing (for overviews see Fiedler, 1988; Isen, 1987; Schwarz, 1990; Schwarz & Bless, 1991), and thus show reduced elaboration at encoding, compared with subjects in a bad or neutral mood. This in turn reduces the impact of argument quality on the attitudinal outcomes of happy compared with neutral or sad subjects. The present studies extend the range of the processing analysis of mood effects in persuasion in two directions.

First, the studies provide clear evidence of mood effects on judgmental processes contributing to attitude formation and change (independently of effects at encoding). Indeed, the presented findings emphasize the importance of delineating the different stages involved in processing persuasive communications. Both experiments indicate that the elaboration of message content at encoding is not the only variable that may lead to differences in the attitudinal impact of strong and weak arguments.

Second, our findings point out the importance of specifying how information relevant to forming an attitude judgment—particularly information from persuasive messages—is represented in memory. Our data challenge the notion that attitude judgments formed or reported some time after message presentation are either retrieved from memory intact (Lingle & Ostrom, 1981) or calculated from retrieved cognitive responses made during initial encoding (Greenwald, 1968; Love & Greenwald, 1978). We argue that, in addition, subjects may also rely on nonattitudinal global representations of the message formed during encoding. Further work on this topic could benefit, as ours did, from models that address how social knowledge in other domains is represented.

In fact, the persuasion domain seems to be especially fruitful for further investigating the differential implications of affective states on processing in general. Tracing the impact of affect on many domain-specific judgments has proven difficult because little is known about the cognitive processes involved in making such judgments. In the attitude domain, however, much is now known about the various processes that underlie attitude formation or change. Our results indicate that researchers will need to dedicate more attention to isolating the impact of mood on various and multiple processing stages. The impact of affective states on cognitive processing is not limited to a single processing stage. Rather, the increased heuristic processing under positive mood, and increased systematic processing under negative mood, is likely to show different effects at different processing stages, thus adding to the complexity of the affect–cognition interplay.

References

Bless, H., Bohner, G., Schwarz, N., & Strack, F. (1990). Mood and persuasion: A cognitive response analysis. *Personality and Social Psychology Bulletin, 16,* 331–345.

Chaiken, S. (1980). Heuristic versus systematic information and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology, 39,* 752–766.

Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario symposium* (Vol. 5, pp. 3–40). Hillsdale, NJ: Erlbaum.

Ebbesen, E. B. (1980). Cognitive processes in understanding ongoing behavior. In R. Hastie, T. Ostrom, E. Ebbesen, R. Wyer, D. Hamilton, & D. Carlston (Eds.), *Person memory: A cognitive basis of social perception* (pp. 179–225). Hillsdale, NJ: Erlbaum.

Ebbesen, E. B. (1981). Cognitive processes in inferences about a person's personality. In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), *Social cognition: The Ontario symposium* (Vol. 1, pp. 247–276). Hillsdale, NJ: Erlbaum.

Fiedler, K. (1988). Emotional mood, cognitive style, and behavior regulation. In K. Fiedler & J. Forgas (Eds.), *Affect, cognition, and social behavior* (pp. 100–119). Göttingen, Federal Republic of Germany: Hogrefe.

Forgas, J. P., & Bower, G. H. (1987). Mood effects on person perception judgments. *Journal of Personality and Social Psychology, 53,* 53–60.

Greenwald, A. G. (1968). Cognitive learning, cognitive response to persuasion, and attitude change. In A. Greenwald, T. Brock, & T. Ostrom (Eds.), *Psychological foundations of attitudes* (pp. 148–170). San Diego, CA: Academic Press.

Hastie, R., & Park, B. (1986). The relationship between memory and judgment depends on whether the judgment task is memory-based or on-line. *Psychological Review, 93,* 258–268.

Hastie, R., Park, B., & Weber, R. (1984). Social memory. In R. S. Wyer, Jr. & T. K. Srull (Eds.), *Handbook of social cognition* (Vol. 2, pp. 151–212). Hillsdale, NJ: Erlbaum.

Innes, J. M., & Ahrens, C. R. (1991). Positive mood, processing goals, and the effects of information on evaluative judgment. In J. Forgas (Ed.), *Emotion and social judgment* (pp. 221–239). Elmsford, NY: Pergamon Press.

Isen, A. M. (1987). Positive affect, cognitive processes, and social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 20, pp. 203–253). San Diego, CA: Academic Press.

Judd, C. M., & Lusk, C. M. (1984). Knowledge structures and evaluative judgments: Effects of structural variables on judgment extremity. *Journal of Personality and Social Psychology, 46,* 1193–1207.

Lichtenstein, M., & Srull, T. K. (1987). Processing objectives as a determinant of the relationship between recall and judgment. *Journal of Experimental Social Psychology, 23,* 93–118.

Lingle, J. H., & Ostrom, T. M. (1981). Principles of memory and cognition in attitude formation. In R. E. Petty, T. M. Ostrom, & T. C. Brock (Eds.), *Cognitive responses in persuasion* (pp. 399–420). Hillsdale, NJ: Erlbaum.

Linville, P. W. (1982). The complexity-extremity effect and age based stereotyping. *Journal of Personality and Social Psychology, 42,* 193–211.

Linville, P. W., & Jones, E. E. (1980). Polarized appraisals of outgroup members. *Journal of Personality and Social Psychology, 38,* 698–703.

Love, R. E., & Greenwald, A. G. (1978). Cognitive responses to persuasion as mediators of opinion change. *Journal of Personality and Social Psychology, 104,* 231–241.

Mackie, D. M., & Asuncion, A. G. (1990). On-line and memory-based processing of attitude change. *Journal of Personality and Social Psychology, 59,* 5–16.

Mackie, D. M., Asuncion, A. G., & Rosselli, F. (in press). The impact of positive affect on persuasion processes. *Review of personality and social psychology* (Vol. 14). Newbury Park, CA: Sage.

Mackie, D. M., & Worth, L. T. (1989). Cognitive deficits and the mediation of positive affect in persuasion. *Journal of Personality and Social Psychology, 57,* 27–40.

Mackie, D. M., & Worth, L. T. (1991). Feeling good, but not thinking

straight: The impact of positive mood on persuasion. In J. Forgas (Ed.), *Emotion and social judgments* (pp. 201–219). Elmsford, NY: Pergamon Press.

Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and persuasion: Classic and contemporary approaches.* Dubuque, IA: William C. Brown.

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 124–203). San Diego, CA: Academic Press.

Petty, R. E., Wells, G. L., & Brock, T. C. (1976). Distraction can enhance or reduce yielding to propaganda: Thought disruption versus effort justification. *Journal of Personality and Social Psychology, 34,* 874–884.

Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 527–561). New York: Guilford Press.

Schwarz, N., & Bless, H. (1991). Happy and mindless, but sad and smart? The impact of affective states on analytic reasoning. In J. Forgas (Ed.), *Emotion and social judgments* (pp. 55–71). Elmsford, NY: Pergamon Press.

Schwarz, N., Bless, H., & Bohner, G. (1991). Mood and persuasion: Affective states influence the processing of persuasive communications. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 24, pp. 161–197). San Diego, CA: Academic Press.

Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology, 45,* 513–523.

Schwarz, N., & Clore, G. L. (1988). How do I feel about it? Informative functions of affective states. In K. Fiedler & J. Forgas (Eds.), *Affect, cognition, and social behavior* (pp. 44–62). Gottingen, Federal Republic of Germany: Hogrefe.

Slamecka, N. J., & Graf, P. (1978). The generation effect: Delineation of a phenomenon. *Journal of Experimental Psychology: Human Learning & Memory, 4,* 592–604.

Srull, T. K. (1983). Affect and memory: The impact of affective reactions in advertising on the representation of product information and memory. In R. P. Bagozzi & A. M. Tybout (Eds.), *Advances in consumer research* (Vol. 10, pp. 520–525). Ann Arbor, MI: Association for Consumer Research.

Strack, F., Schwarz, N., & Gschneidinger, E. (1985). Happiness and reminiscing: The role of time perspective, mood, and mode of thinking. *Journal of Personality and Social Psychology, 49,* 1460–1469.

Worth, L. T., & Mackie, D. M. (1987). Cognitive mediation of positive mood in persuasion. *Social Cognition, 5,* 76–94.

Wyer, R. S., & Gordon, S. E. (1984). The cognitive representation of social information. In R. S. Wyer, Jr. & T. K. Srull (Eds.), *Handbook of social cognition* (Vol. 2, pp. 73–150). Hillsdale, NJ: Erlbaum.

Wyer, R. S., & Srull, T. K. (1989). *Memory and cognition in its social context.* Hillsdale, NJ: Erlbaum.

Received January 17, 1990
Revision received March 30, 1992
Accepted April 1, 1992 ■

ZUMA-Arbeitsberichte

80/15 Gerhard Arminger, Willibald Nagl, Karl F. Schuessler
Methoden der Analyse zeitbezogener Daten. Vortragsskripten der ZUMA-Arbeitstagung vom 25.09. - 05.10.79

81/07 Erika Brückner, Hans-Peter Kirschner, Rolf Porst, Peter Prüfer, Peter Schmidt
Methodenbericht zum "ALLBUS 1980"

81/19 Manfred Küchler, Thomas P. Wilson, Don H. Zimmerman
Integration von qualitativen und quantitativen Forschungsansätzen

82/03 Gerhard Arminger, Horst Busse, Manfred Küchler
Verallgemeinerte Lineare Modelle in der empirischen Sozialforschung

82/08 Glenn R. Carroll
Dynamic analysis of discrete dependent variables: A didactic essay

82/09 Manfred Küchler
Zur Messung der Stabilität von Wählerpotentialen

82/10 Manfred Küchler
Zur Konstanz der Recallfrage

82/12 Rolf Porst
"ALLBUS 1982" - Systematische Variablenübersicht und erste Ansätze zu einer Kritik des Fragenprogramms

82/13 Peter Ph. Mohler
SAR - Simple AND Retrieval mit dem Siemens-EDT-Textmanipulationsprogramm

82/14 Cornelia Krauth
Vergleichsstudien zum "ALLBUS 1980"

82/21 Werner Hagstotz, Hans-Peter Kirschner, Rolf Porst, Peter Prüfer
Methodenbericht zum "ALLBUS 1982"

83/09 Bernd Wegener
Two approaches to the analysis of judgments of prestige: Interindividual differences and the general scale

83/11 Rolf Porst
Synopse der ALLBUS-Variablen. Die Systematik des ALLBUS-Fragenprogramms und ihre inhaltliche Ausgestaltung im ALLBUS 1980 und ALLBUS 1982

84/01 Manfred Küchler, Peter Ph. Mohler
Qualshop (ZUMA-Arbeitstagung zum "Datenmanagement bei qualitativen Erhebungsverfahren") - Sammlung von Arbeitspapieren und -berichten, Teil I + II

84/02 Bernd Wegener
Gibt es Sozialprestige? Konstruktion und Validität der Magnitude-Prestige-Skala

84/03 Peter Prüfer, Margrit Rexroth
Erfahrungen mit einer Technik zur Bewertung von Interviewerverhalten

84/04 Frank Faulbaum
Ergebnisse der Methodenstudie zur internationalen Vergleichbarkeit von Einstellungsskalen in der Allgemeinen Bevölkerungsumfrage der Sozialwissenschaften (ALLBUS) 1982

84/05 Jürgen Hoffmeyer-Zlotnik
Wohnquartiersbeschreibung. Ein Instrument zur Bestimmung des sozialen Status von Zielhaushalten

84/07 Gabriele Hippler, Hans-Jürgen Hippler
Reducing Refusal Rates in the Case of Threatening Questions: The "Door-in-the-Face" Technique

85/01 Hartmut Esser
Befragtenverhalten als "rationales Handeln" - Zur Erklärung von Antwortverzerrungen in Interviews

85/03 Rolf Porst, Peter Prüfer, Michael Wiedenbeck, Klaus Zeifang
Methodenbericht zum "ALLBUS 1984"

86/01 Dagmar Krebs
Zur Konstruktion von Einstellungsskalen im interkulturellen Vergleich

86/02 Hartmut Esser
Können Befragte lügen? Zum Konzept des "wahren Wertes" im Rahmen der handlungstheoretischen Erklärung von Situationseinflüssen bei der Befragung

86/03 Bernd Wegener
Prestige and Status as Function of Unit Size

86/04 Frank Faulbaum
Very Soft Modeling: The Logical Specification and Analysis of Complex Process Explanations with Arbitrary Degrees of Underidentification and Variables of Arbitrary Aggregation and Measurement Levels

86/05 Peter Prüfer, Margrit Rexroth (Übersetzung: Dorothy Duncan)
On the Use of the Interaction Coding Technique

86/06 Hans-Peter Kirschner
Zur Kessler-Greenberg-Zerlegung der Varianz der Meßdifferenz zwischen zwei Meßzeitpunkten einer Panel-Befragung

86/07 Georg Erdmann
Ansätze zur Abbildung sozialer Systeme mittels nicht-linearer dynamischer Modelle

86/09 Heiner Ritter
Einige Ergebnisse von Vergleichstests zwischen den PC- und Mainframe-Versionen von SPSS und SAS

86/11 Günter Rothe
Bootstrap in generalisierten linearen Modellen

87/01 Klaus Zeifang
Die Test-Retest-Studie zum ALLBUS 1984 - Tabellenband

87/02 Klaus Zeifang
Die Test-Retest-Studie zum ALLBUS 1984 - Abschlußbericht

87/04 Barbara Erbslöh, Michael Wiedenbeck
Methodenbericht zum "ALLBUS 1986"

87/05 Norbert Schwarz, Julia Bienias
What Mediates the Impact of Response Alternatives on Behavioral Reports?

87/06 Norbert Schwarz, Fritz Strack, Gesine Müller, Brigitte Chassein
The Range of Response Alternatives May Determine the Meaning of the Question: Further Evidence on Informative Functions of Response Alternatives

87/07 Fritz Strack, Leonard L. Martin, Norbert Schwarz
The Context Paradox in Attitude Surveys: Assimilation or Contrast?

87/08 Gudmund R. Iversen
Introduction to Contextual Analysis

87/09 Seymour Sudman, Norbert Schwarz
Contributions of Cognitive Psychology to Data Collection in Marketing Research

87/10 Norbert Schwarz, Fritz Strack, Denis Hilton, Gabi Naderer
Base-Rates, Representativeness, and the Logic of Conversation

87/11 George F. Bishop, Hans-Jürgen Hippler, Norbert Schwarz, Fritz Strack
A Comparison of Response Effects in Self-Administered and Telephone Surveys

87/12 Norbert Schwarz
Stimmung als Information. Zum Einfluß von Stimmungen und Emotionen auf evaluative Urteile

88/01 Antje Nebel, Fritz Strack, Norbert Schwarz
Tests als Treatment: Wie die psychologische Messung ihren Gegenstand verändert

88/02 Gerd Bohner, Herbert Bless, Norbert Schwarz, Fritz Strack
What Triggers Causal Attributions? The Impact of Valence and Subjective Probability

88/03 Norbert Schwarz, Fritz Strack
The Survey Interview and the Logic of Conversation: Implications for Questionnaire Construction

88/04 Hans-Jürgen Hippler, Norbert Schwarz
"No Opinion"-Filters: A Cognitive Perspective

88/05 Norbert Schwarz, Fritz Strack
Evaluating One's Life: A Judgment of Subjective Well-Being

88/06 Norbert Schwarz, Herbert Bless, Gerd Bohner, Uwe Harlacher, Margit Kellenbenz
Response Scales as Frames of Reference:
The Impact of Frequency Range on Diagnostic Judgments

88/07 Michael Braun
Allbus-Bibliographie (7. Fassung, Stand: 30.6.88)

88/08 Günter Rothe
Ein Ansatz zur Konstruktion inferenzstatistisch verwertbarer Indices

88/09 Ute Hauck, Reiner Trometer
Methodenbericht
International Social Survey Program - ISSP 1987

88/10 Norbert Schwarz
Assessing frequency reports of mundane behaviors:
Contributions of cognitive psychology to questionnaire construction

88/11 Norbert Schwarz, B. Scheuring (sub.)
Judgments of relationship satisfaction: Inter- and intraindividual comparison strategies as a function of questionnaire structure

88/12 Rolf Porst, Michael Schneid
Ausfälle und Verweigerungen bei Panelbefragungen
- Ein Beispiel -

88/13 Cornelia Züll
SPSS-X. Anmerkungen zur Siemens BS2000 Version

88/14 Michael Schneid
Datenerhebung am PC - Vergleich der Interviewprogramme "interv^{+}" und "THIS"

88/15 Norbert Schwarz, Bettina Scheuring
Die Vergleichsrichtung bestimmt das Ergebnis von Vergleichsprozessen:
Ist - Idealdiskrepanzen in der Partnerwahrnehmung

88/16 Norbert Schwarz, Bettina Scheuring
Die Vergleichsrichtung bestimmt das Ergebnis von Vergleichsprozessen: Ist-Idealdiskrepanzen in der Beziehungsbeurteilung

89/01 Norbert Schwarz, George F. Bishop, Hans-J. Hippler, Fritz Strack
Psychological Sources Of Response Effects in Self-Administered And Telephone Surveys

89/02 Michael Braun, Reiner Trometer, Michael Wiedenbeck,
Methodenbericht. Allgemeine Bevölkerungsumfrage der Sozialwissenschaften - ALLBUS 1988 -

89/03 Norbert Schwarz
Feelings as Information:
Informational and Motivational Functions of Affective States

89/04 Günter Rothe
Jackknife and Bootstrap:
Resampling-Verfahren zur Genauigkeitsschätzung von Parameterschätzungen

89/05 Herbert Bless, Gerd Bohner, Norbert Schwarz und Fritz Strack
Happy and Mindless?
Moods and the Processing of Persuasive Communications

89/06 Gerd Bohner, Norbert Schwarz und Stefan E. Hormuth
Die Stimmungs-Skala: Eine deutsche Version des "Mood Survey" von Underwood und Froming

89/07 Ulrich Mueller
Evolutionary Fundamentals of Social Inequality, Dominance and Cooperation

89/08 Robert Huckfeldt
Noncompliance and the Limits of Coercion:
The Problematic Enforcement of Unpopular Laws

89/09 Peter Ph. Mohler, Katja Frehsen und Ute Hauck
CUI - Computerunterstützte Inhaltsanalyse
Grundzüge und Auswahlbibliographie zu neueren Anwendungen

89/10 Cornelia Züll, Peter Ph. Mohler
Der General Inquirer III -
Ein Dinosaurier für die historische Forschung

89/11 Fritz Strack, Norbert Schwarz, Brigitte Chassein, Dieter Kern, Dirk Wagner
The Salience of Comparison Standards and the Activation of Social Norms: Consequences for Judgments of Happiness and their Communication

89/12 Jutta Kreiselmaier, Rolf Porst
Methodische Probleme bei der Durchführung telefonischer Befragungen: Stichprobenziehung und Ermittlung von Zielpersonen, Ausschöpfung und Nonresponse, Qualität der Daten.

89/13 Rainer Mathes
Modulsystem und Netzwerktechnik.
Neuere inhaltsanalytische Verfahren zur Analyse von Kommunikationsinhalten.

89/14 Jutta Kreiselmaier, Peter Prüfer, Margrit Rexroth
Der Interviewer im Pretest.
Evaluation der Interviewerleistung und Entwurf eines neuen Pretestkonzepts. April 1989.

89/15 Henrik Tham
Crime as a Social Indicator.

89/16 Ulrich Mueller
Expanding the Theoretical and Methodological Framework of Social Dilemma Research

89/17 Hans-J. Hippler, Norbert Schwarz, Elisabeth Noelle-Neumann
Response Order Effects in Dichotomous Questions:
The Impact of Administration Mode

89/18 Norbert Schwarz, Hans-J. Hippler, Elisabeth Noelle-Neumann, Thomas Münkel
Response Order Effects in Long Lists:
Primacy, Recency, and Asymmetric Contrast Effects

89/19 Wolfgang Meyer
Umweltberichterstattung in der Bundesrepublik Deutschland

89/20 Michael Braun, Reiner Trometer
ALLBUS Bibliographie (8. Fassung, Stand: 30.6. 1989)

89/21 Günter Rothe
Gewichtungen zur Anpassung an Statusvariablen.
Eine Untersuchung am ALLBUS 1986

89/22 Norbert Schwarz, Thomas Münkel, Hans-J. Hippler
What determines a "Perspective"?
Contrast Effects as a Function of the Dimension
Tapped by Preceding Questions

89/23 Norbert Schwarz, Andreas Bayer
Variationen der Fragenreihenfolge als Instrument
der Kausalitätsprüfung: Eine Untersuchung zur Neu-
tralisationstheorie devianten Verhaltens

90/01 Norbert Schwarz, Fritz Strack, Hans-Peter Mai
Assimilation and Contrast Effects in Part-Whole
Question Sequences:
A Conversational Logic Analysis

90/02 Norbert Schwarz, Fritz Strack, Hans-J. Hippler, George Bishop
The Impact of Administration Mode on Response Effects in
Survey Measurement

90/03 Norbert Schwarz, Herbert Bless, Gerd Bohner
Mood and Persuasion: Affective States Influence the
Processing of Persuasive Communications

90/04 Michael Braun, Reiner Trometer
ALLBUS-Bibliographie 90

90/05 Norbert Schwarz, Fritz Strack
Context Effects in Attitude Surveys:
Applying Cognitive Theory to Social Research

90/06 Norbert Schwarz, Herbert Bless, Fritz Strack,
Gisela Klumpp, Annette Simons
Ease of Retrieval as Information:
Another Look at the Availability Heuristic

90/07 Norbert Schwarz, Fritz Strack, Hans-J. Hippler
Kognitionspsychologie und Umfrageforschung:
Themen und Befunde eines interdisziplinären Forschungsgebietes

90/08 Norbert Schwarz, Hans-J. Hippler
Response Alternatives:
The Impact of their Choice and Presentation Order

90/09 Achim Koch
Externe Vergleichsdaten zum ALLBUS 1984, 1986, 1988.

90/10 Norbert Schwarz, Bärbel Knäuper, Hans-J. Hippler,
Elisabeth Noelle-Neumann, Leslie Clark
Rating Scales:
Numeric Values May Change the Meaning of Scale Labels

91/01 Denis J. Hilton
Conversational Inference and Rational Judgment

91/02 Denis J. Hilton
A Conversational Model of Causal Explanation

91/03 Joseph P. Forgas
Mood Effects on Interpersonal Preferences:
Evidence for Motivated Processing Strategies

91/04 Joseph P. Forgas
Affective Influences on Interpersonal Perception

91/05 Norbert Schwarz, Herbert Bless
Constructing Reality and Its Alternatives:
An Inclusion / Exclusion Model of
Assimilation and Contrast Effects in Social Judgment

91/06 Herbert Bless, Roland F. Fellhauer, Gerd Bohner, Norbert Schwarz
Need for Cognition: Eine Skala zur Erfassung von Engagement und
Freude bei Denkaufgaben

91/07 Norbert Schwarz, Bärbel Knäuper, E. Tory Higgins
Der Einfluß von Rangordnungsaufgaben auf nachfolgende Denkprozesse:
Zur Aktivierung prozeduraler Sets

91/08 Bettina Scheuring, Norbert Schwarz
Selbstberichtete Verhaltens- und Symptomhäufigkeiten:
Was Befragte aus Antwortvorgaben des Fragebogens lernen

91/09 Norbert Schwarz, Herbert Bless
Scandals and the Public's Trust in Politicians:
Assimilation and Contrast Effects

91/10 Rolf Porst
Ausfälle und Verweigerungen bei einer telefonischen Befragung

91/11 Uwe Blien, Heike Wirth, Michael Müller
Identification risk for microdata stemming from official statistics

91/12 Petra Beckmann
Methodological Report ISSP 1989

91/13 Martina Wasmer, Achim Koch, Michael Wiedenbeck
Methodenbericht zur "Allgemeinen Bevölkerungsumfrage der
Sozialwissenschaften" (Allbus) 1990.

91/14 Uwe Blien, Oded Löwenbein
Einkommensanalysen auf der Grundlage amtlicher Daten und
Umfragedaten: Ergebnisse zur betrieblichen Seniorität und
Arbeitslosigkeit.

91/15 Petra Beckmann, Peter Mohler, Rolf Uher,
ISSP Basic Information on the ISSP Data Collection 1985 - 1994

91/16 Norbert Schwarz
In welcher Reihenfolge fragen?
Kontexteffekte in standardisierten Befragungen

91/17 Ellen D. Riggle, Victor C. Ottati, Robert S. Wyer, Jr.
James Kuklinski, Norbert Schwarz
Bases of Political Judgments:
The Role of Stereotypic and Non-stereotypic Information

91/18 Dagmar Krebs
Was ist sozial erwünscht?
Der Grad sozialer Erwünschtheit von Einstellungsitems

91/19 Michael Braun, Reiner Trometer
ALLBUS-Bibliographie

91/20 Michael Schneid
Einsatz computergestützter Befragungssyteme
in der Bundesrepublik Deutschland

91/21 Rolf Porst, Michael Schneid
Software-Anforderungen an
computergestützte Befragungssysteme

91/22 Ulrich Mueller
The Reproductive Success of the Elites in Germany,
Great Britain, Japan and the USA during the 19th
and 20th Century

92/01 P.H. Hartmann, B. Schimpl-Neimanns
Zur Repräsentativität sozio-demographischer Merkmale
des ALLBUS - multivariate Analysen zum Mittelschichtbias
der Umfrageforschung

92/02 Gerd Bohner, Kimberly Crow, Hans-Peter Erb, Norbert Schwarz
Affect and Persuasion: Mood Effects on the Processing of Message
Content and Context Cues and on Subsequent Behavior

92/03 Herbert Bless, Gerd Bohner, Traudel Hild, Norbert Schwarz
Asking Difficult Questions: Task Complexity Increases the Impact
of Response Alternatives

92/04 Wolfgang Bandilla, Siegfried Gabler, Michael Wiedenbeck
Methodenbericht zum DFG-Projekt Allbus Baseline-Studie 1991

92/05 Frank Faulbaum
Von der Variablenanalyse zur Evaluation von Handlungs- und
Prozeßzusammenhängen

92/06 Ingwwer Borg
Überlegungen und Untersuchungen zur Messung der subjektiven
Unsicherheit der Arbeitsstelle

92/07 Ingwer Borg, Michael Braun
Arbeitsethik und Arbeitsinvolvement als Moderatoren der
psychologischen Auswirkungen von Arbeitsunsicherheit

92/08 Eleanor Singer, Hans-Jürgen Hippler, Norbert Schwarz
Confidentiality Assurances in Surveys: Reassurance or Threat?

92/09 Herbert Bless, Diane M. Mackie, Norbert Schwarz
Mood Effects on Attitude Judgments: The Independent Effects
of Mood Before and After Message Elaboration

92/10 Ulrich Mueller, Carola Schmid
Ehehäufigkeit und Fruchtbarkeit weiblicher Mitglieder der deutschen Elite

92/11 Herbert Bless, Fritz Strack, Norbert Schwarz
The Informative Functions of Research Procedures: Bias and the Logic of Conversation

92/12 Norbert Schwarz, Herbert Bless, Micheala Wänke
Subjective Assessment and Evaluations of Change: Lessons from Social Cognition Research

92/13 Norbert Schwarz, Hans-J. Hippler
Buffer Items:
When Do They Buffer and When Don't They?

92/14 Hans-J. Hippler, Norbert Schwarz
The Impact of Administration Modes on Response Effects in Surveys

92/15 Michaela Wänke, Norbert Schwarz
Comparative Judgments:
How the Direction of Comparison Determines the Answer